Superintending Surgeon's Department Southern Division.

REPORT ON FEVER

BY

ASST. SURG. WILLIAM GEDDES.

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OF THE

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MEMORANDUM.

The Medical Board have particular satisfaction in commencing the prosecution of the views set forth in their circular (No. 638) dated 21st Aug. 1826, by laying before the Service the following Report, the subject of which, it is obvious, has engaged for a length of time the utmost energies of a mind singularly well constituted for the research.

The persevering diligence and judgment with which MR. GEDDES *appears to have studied to ascertain the relative value of the remedial agents, and their proper application in different stages and circumstances of the forms of fever of most common occurrence in this country, cannot fail to command a very high degree of consideration from his Professional brethren, and the descriptive and discriminating statement, he has given of his practice and its results can scarcely be perused without engaging attention to many particulars of importance in the treatment, which are very apt to be overlooked although there can be little doubt that the result is very materially affected by them.*

It is not however the Board's intention, in publishing this Report, to enter into an examination of, or state their own sentiments, as confirmatory or otherwise of the opinions it conveys, but merely to lay it before the Service as a valuable contribution to Medical Science for which its able and laborious Author is in an eminent degree entitled to the gratitude of his brother officers.

By Order
W. SCOT,
SEC. MED. BOARD.

FORT ST. GEORGE,
Medical Board Office,
9*th August*, 1827.

Errata.

Page	Line	For	To read
6th.	2nd.	remittent, &c.	remittent, to—
10th	1st	are	being
19th.	11th.	quality	quantity. —
20th.	20th.	supervension	supervention,
21st.	9th.	sequeæ	sequelæ
24th.	22nd.	;	, and
31st	4th.	cullen	Cullen
34th.	17th.	there	these
40th.	12th.	these	there
44th.	8th.	There	These
54th.	28th.	often	after
71st.	11th.	fall	falls
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85th.	8th.	is	it
91st.	37th,	remaining	removing
117th.	24th.	these	there
122nd.	23rd.	of	up
126th.	13th.	land	loud
132d.	17th.	in the jail and	in the jail, and
134th.	18th.	vita	vitæ
137th.	27th.	one	on a
140th.	10th.	vita	vitæ

REPORT

ON THE SERINGAPATAM FEVER

AS IT APPEARED IN THE 1st. BATT. 11th REGT. N. I.

From its arrival at that station in April 1823, *till the* 10*th March* 1824.

BY ASST. SURG. W. GEDDES.

The 1st Batt. 11th Regt. N. I. marched from Ellore in the month of Feby. 1823 and without any casualty or material sickness, arrived at Seringapatam on the 15th of April, having marched in this period about 500 miles. The corps consisted at this time of 529 Hindus, 488 Mussulmans, 98 Natives of Hindusthan and 4 Half-casts, making a total, exclusive of the European Officers, of 1119.

During their sojourn of an year and a half at Ellore, the general health of the Battalion had been good, the average number of admissions into hospital during the month having

been 69, of which 22 were fevers; and the average number of deaths in the same period being two, chiefly from the disease called beri-beri, which had occasionally occurred in the latter half of the preceding year.

Previous to the corps' arrival at Ellore, which, generally speaking, is the native country of most of its sepoys, it had been stationed in the Nagpore territory for two years, during which it is said to have enjoyed a greater degree of health than many of the other battalions in that part of the country, and this circumstance was attributed partly to the situation which the 1st Batt. 11th Regt. N. I. occupied at Nagpore, but chiefly to the habits of sobriety and general good conduct which characterised this battalion; on their arrival however at Seringapatam it soon appeared that these habits secured to them no immunity from the endemic of the place, as will appear from the following facts which I have endeavoured to arrange and detail in as brief a manner as possible, and which I am inclined to hope may not be found altogether devoid of interest.

The prevalence of the disease and the peculiarity of its types have necessarily been derived from the larger mass of natives in the

battalion, but I have had many opportunities of observing its appearance among the European Officers who were seized with it, while ample means have been afforded me of judging of its more minute symptoms and gradual approach in my own person; from the arrival of the corps until the 10th of the following March, being a period of nearly eleven months, the number of the natives who were attacked was as follows, viz. 392 Hindus, 297 Mussulmans, 58 Hindusthanees and all the Half-casts Total 751, and the number of cases occurring as relapses may be said to have been an equal number, making a total of cases which came under my notice of 1500, or an average of monthly admissions of 136 cases of fever.

The fever of Seringapatam is either remittent or intermittent in its nature, varying in the number of its paroxysms; in the length of interval at which these paroxysms take place; and in the intensity and variety of its symptoms.

In the greater number of cases the paroxyms are but few; sometimes the disease terminates in one; occasionally a second takes place; and very frequently a third brings the disease to a conclusion; while in cases of this description, there is often to be observed the appearance of a sort of crisis in which the disease has terminat-

ed. In other cases, the paroxysms of the fever continue to recur, generally at the regular intervals of its type for many days or even weeks, and at last when they cease to occur this circumstance is unattended by any appearance of a critical termination; the former class of cases being instances of a fever simply effecting its object, which appears to be the removing some state of the system incompatible with the healthy discharge of all its functions; while one of the latter description may have also effected this object, but owing to the disposition of the body to assume a habit whether an healthy or a diseased one, the paroxysms still continue to recur, until this habit is in some way broke in upon, or until certain diseases which would appear to have favoured the tendency of the body to assume and afterwards to retain this diseased habit are removed; the most simple form of the former being a fever of one paroxysm; and a quartan of a month's or more standing, perhaps the most exquisite form of the latter.

Between these two extremes there is a number of shades gradually approaching to those where it may be difficult exactly to specify the peculiar class to which each belongs, but it appears to me, that in the treatment it is of importance to bear in mind the distinction, and to vary our medi-

cines accordingly. In the following report, for the purpose of being concise, I shall venture to make use of the term critical in speaking of the former, and apply that of chronic to the latter class of cases.

The interval or space of time from the commencement of one paroxysm to that of the next, varies either from the type of the fever, or from the circumstances of anticipation, or postponement of the paroxysms, which occasionally happen, and sometimse take place with great regularity.

The usual types of fever are observed in the endemic of Seringapatam and also some of their varieties; tertians and quartans, but especially the former have frequently two paroxyms in their interval, making in the case of tertian an attack daily, each alternate one about the same hour and with the same symptoms and in that of quartan, a paroxysm at the end of each 36 hours, or an attack on two following days and none on the third.

The paroxysms of these different types of fever are separated by a remission or an intermission and the latter I have conceived to be present, when the pulse has come down below 72, the skin is perfectly cool and moist and there is little or no headache. In the following Report, I

have made use of the terms quotidian &c. remittent, [illegible] to designate there being only a remission, while that of intermittent is applied to the case of there being an intermission and the above varieties of tertian and quartan are of course denominated double tertian and double quartan, and these as well as the single cases are either remittent or inremittent, critical or chronic.

Irregularities in the anticipation and postponement of the paroxyms necessarily occasion irregular cases of fever, but these, when the symptoms have had no peculiarity have been classed with those cases to which they had most affinity; a few cases however of an irregular and remittent nature I have judged proper to class separately, having their symptoms progress and termination different from any of the regular types of fever and to these I have given the name of irregular remittent.

The cases of one paroxysm have been arranged together and are further distinguished by the space of time taken up in the body coming down to the apyrexial state, this in some cases being effected in the course of a few hours, while in others it more gradually takes place in two or three days; to both description of cases the term ephemeral has been applied and conceiving the disease to be an in-

termittent or remittent stopt in its progress, the name of ephemeral remittent is used in speaking of that case where on the morning following admission, that is, generally more than 24 hours after the attack, there is still some degree of febrile symptoms present, in which case, had a second paroxysm taken place on that day, the disease would have been stiled remittent and the term ephemeral intermittent is in like manner applied to that case where at the same period an intermission has taken place.

I trust it will not be supposed that it is from any vain spirit of innovation that I have made use of the above terms, my object in doing so is simply to supply by a word what would otherwise occasion much repetition and prolixity and the meaning I attach to this word being known I hope it will answer the purpose of marking the distinction I have mentioned, although the term itself may be liable to multifarious objections.

The symptoms of an attack of fever are generally gradual in their approach especially where the patient has not been much exposed to any of the exciting causes and in critical remittent cases; he generally complains, for a day or two before the complete

attack of fever, of feeling unwell, the principal symptoms being langour, lassitude, disinclination to exertion, want of command of thought, irritability of temper, pains in the limbs especially on motion and these are frequently so severe as to particularly attract the patient's attention who describes them as giving a sensation of his body having been well beaten.

There are generally also headachs, occasionally confined to one spot, as to the top of the head, along with a heat felt upon the application of the hand there, sometimes one of the temples is affected, or half of the forehead with a pungent pain perhaps analogous to tic doloreux—and at others the whole forehead or the eyes, the pain being increased on pressing the latter; these are accompanied with heats and chills, the latter chiefly in the morning and forenoon and often referred by the patient to the coldness of the weather; in the course of the day, scanty and partial sweats take place, confined to the hands, breast and forehead and the disagreeable sense of warmth which the patient generally experiences is not relieved by them; this heat is more particularly felt in the hands and feet and is increased towards evening accompanied with a degree of clam-

miness in the fauces and thirst, while the feeling of oppression prompts the patient to sit in a cool situation, upon his removal from which, a more disagreeable sense of warmth than before is experienced.

The pulse is also found a little quickened in the morning with a degree of irritability and hardness in its stroke, and this is increased, during the day, after meals, especially after any food taken in the afternoon, and also upon very little exertion. The tongue has a degree of foulness and roughness particularly in its middle, and this cannot be entirely removed. The appetite also gradually fails, and the clammy state of the fauces requires in mastication, the assistance of copious draughts of liquids. The patient has generally restless nights, accompanied with a hot dry feeling in the skin, and in a European, the face, especially in the morning is of a pallid or occasionally a sallow hue.

With these symptoms, costiveness or scanty stools and high coloured urine, are generally present; (and when they have existed for a certain period which is occasionally lengthened out to a week or two, especially if the patient abstains from stimuli of all descriptions, more frequently however is confined to as many

days,) sometimes however ~~are~~ being so slight as not to be observed, the patient, after exposure to any of the exciting causes, as severe exertion, a full meal, &c. or occasionally where these cannot be traced, finds himself oppressed with an insupportable increase of heat of skin in the afternoon or evening, with great lassitude and disinclination to exertion; he passes a restless night and in the morning finds himself affected with severe headache, want of appetite, thirst and general uneasiness and disorder.

These symptoms continue until an hour or two before the usual period of his after paroxysms of fever, when a disagreeable dry heat of the hands begins to be felt, alternated with feelings of the natural temperature, the partial perspiration which may have been present on the forehead or hands disappears, and perhaps at the same time, sickness and vomiting supervene, obliging the patient to take to bed, when shortly afterwards a degree of coldness is felt in the feet, inducing him to draw a blanket over them; at the same time, there is an inclination to stretch the limbs with frequent yawning, and very shortly after, an involuntary shiver marks more particularly the nature of the attack.

The degree of shivering and other symptoms

of the cold stage, is of various duration and strength in different individuals and in different attacks of the same individual, and after a while, the forehead begins to be felt hot and dry, and then the hands in like manner, and afterwards general heat of the surface takes place, the feet being the last part which recover from the cold, as they are the first in which it is felt. During the hot stage, there is every degree of heat of skin, restlessness, &c. and after a certain period of various duration, a slight moisture is perceived on the hands and forehead, and this gradually extending to the rest of the body, the patient feels comparatively easy and comfortable.

The pulse previous to the paroxysm, and until shortly before its commencement is somewhat quicker than natural and there is a feeling of hardness in the vessel and sharpness in its distention; occasionally however, especially in intermittent the pulse becomes fuller and slower immediately before the supervention of the cold stage, soon after a feeling of alarm and sensation of cold coming upon the patient, the pulse which also becomes smaller, begins to get more frequent and appears to vary in frequency as the ideas of alarm and sensations of cold or shiverings come across the patient. As

the cold fit proceeds and a degree of heat begins to be felt in the forehead, the pulse continues to get more frequent and small, and occasionally becoming wiry it afterwards begins to get somewhat fuller, but the vessel seems not entirely emptied in the systole, and when it becomes distended, altho' there is a degree of softness in the feel of the pulse, the vessel appears as if it did not admit of the distention beyond a certain point.

The heat of skin afterwards becoming general, the pulse gets stronger and harder and feels as if the heart from excess of irritability contracted with a sudden jerk upon its contents; but when the sweating stage comes on and advances, the sides of the artery appear more relaxed the pulse is softer and fuller, the heart contracts more slowly upon the blood and as if wearied from its previous exertion, does not empty itself completely, leaving apparently always some blood in the arteries, so that on feeling the pulse at the wrist the vessel in its systole feels still a little distended, and the volume of blood is perceived gradually approaching and filling the artery; and passing in a wavelike manner under the fingers, the vessel again slowly contracts itself to receive another gradual distention by the next wave. Sometimes, along with this state of the heart's con-

traction, there is but a very short space between each beat of the pulse, and in this case a curious feeling is observed in it, recalling to the recollection, the troubled state of the sea after a storm.

When a moist state of the skin has taken place, the frequency of the pulse gradually becomes less, sometimes, soon becoming natural, while at other times, it still retains some increased rapidity on the accession of the next paroxysm of fever. In many critical cases, after the occurrence of what I consider the crisis of the disease, the pulse comes down below the natural standard of frequency, and in all cases, for several days after the febrile symptoms have disappeared, stimuli have very little effect in quickening it. When the patient however, has acquired some strength and flesh, the balance of the circulation appears to tend to the other extreme; there occurs a highly excitable state, of the heart and arteries, and a very slight stimulus, such as the ordinary food, or very little exertion, excites a strong pulsation over the whole frame and which is particularly and disagreeably felt in the head on laying it on a pillow.

The cold stage is almost always attended or preceded by yawning, and when it is severe, with frequent and hurried respiration, accompanied with occasional deep sighing and dry cough;

the breathing gets more free as the hot stage advances, but is still accompanied with a degree of anxiety until the perspiration begins to take place.

When the disease has come on gradually, the appetite is considerably impaired before any regular paroxysm of fever has occurred, and when this is violent, in which case it generally turns out critical, there is little inclination for food throughout the attack; in intermittent cases however, especially if relapses and there has been little previous indisposition, some degree of appetite is generally found in the apyrexial periods after the first or second paroxysms, this however disappears should the disease continue, and but little returns until a day or two after the termination of the disease in critical cases, or until two or three weeks in chronic cases when, if the disease is kept up by habit alone, without any organic derangement, the appetite becomes pretty good in the absence of fever. When the disease has been removed, and the inclination for food restored, it is apt to become inordinate, and the indulgence of it must be considered as not an infrequent cause of relapse.

The thirst, I have observed in general most severe, in the dry state of the mouth at the

commencement of the cold stage of fever, and a draught of cold water taken in consequence is often referred to by the patient, as having brought on the attack; in violent cases however, there is often a considerable thirst, especially for acid liquids, throughout the hot stage; this symptom however, is generally, by no means remarkable, nor have I observed it a very prominent feature in the disease.

In the appearance of the tongue many varieties have been observed in cases of fever at Seringapatam, they may all I think however, be referred to two heads, in proportion to the degree and peculiarity of fever with which they are combined, the violence and nature of which, the state of the tongue shews very satisfactorily; the first set of appearances being connected with a high state of fever; the second with less pyrexia, a chronic state of the disease, or little previous indisposition; the former including, the tongue remarkably florid or bright red; the tongue loaded and white; the tongue less loaded, but the tubercles on it enlarged, florid and sprouting up thro' the whitish coating; and all the shades of a milk and water hue between the florid tongue, and that loaded with white sordes; as also partial appearances of the same kind, either irregularly, or in stripes on each

side of the tongue or running down its middle; and along with this state of the tongue, there is often a clamminess in the fauces and dryness of the mouth, and the degree of these combined with the above-mentioned appearances of the tongue, exhibits the violence of the disease. The latter set of varieties comprises the pale tongue, and all the modifications of an ash-coloured description.

I have mentioned that the nausea and vomiting generally begin with the cold stage, and in this case the latter most frequently continues until the hot fit is about to terminate in sweating, when the intervals at which it occurs become gradually longer, and at last it disappears; many cases of fever however, are without this symptom, and frequently it does not occur until the hot stage, or until it is excited by some disagreeable medicine, and I have often observed that when small quantities of common liquids were kept upon the stomach, it would not retain any medicines until some perspiration had taken place, when the vomiting disappeared and the medicine was retained; sometimes indeed even plain liquids do not remain upon the stomach until the skin begins to get a little moist. Vomiting has been observed to be more prevalent in the warmer months, than at any other periods

of the year, and it appears to be more frequent and violent in Europeans than in natives; in the matter vomited up, a considerable admixture of bile is often found diffused, and occasionally when the vomiting is severe a little blood is brought up; indeed there is reason to think that in some instances of Europeans, where the vomiting has been long continued and severe, actual ulceration of the coats of the stomach has taken place.

The disease is often preceded by costiveness, and this has frequently been a symptom on admission, in those cases which have been reported after some days illness; it has been apt also to supervene in the course of the disease, chiefly perhaps from the effects of the medicines employed. The reverse also has sometimes been the case in the course of the disease, and this perhaps in like manner may be often attributed to the antimonials &c. which have been made use of; sometimes, however, in critical cases, it is evident that the crisis of the disease has taken place by a profuse diarrhœa, not referrible to the effect of any medicine, or at least only excited by it; this, when it does occur is watery and bilious without griping, the stools are frequent and generally profuse and the feverish symptoms disappear without any return; sometimes

however a diarrhœa occurring either spontaneously or excited by medicines, goes on to dysentery, and this also occasionally takes place without any previous diarrhœa, along with or very shortly after the attack of fever, or at various periods of its progress. The dysentery which occurs in this manner is more or less acute in its symptoms, sometimes easily and soon removed and at others becoming very severe, the stools being entirely of blood and slime, with much griping, pain on pressing the belly, especially in the head and course of the colon, severe tenesmus and violent fever; this complication of disease frequently proves fatal.

After frequent relapses of the endemic, especially if the constitution is weak or impaired from this disease or any other cause, there appears to occur a tendency to disorders of the bowels putting on the appearance of chronic dysentery; many of the subjects of fever, especially of the Hindusthanees have been readmitted into hospital with this disease, and while under treatment for its removal which is generally very tedious, have had fresh returns of fever, the dysenteric symptoms being occasionally the most prominent, while at other times the repeated attacks of fever have chiefly attracted attention.

When this symptom first makes its appearance, the stools are not frequent, but are amazingly copious, composed of feculent matter of various appearances and generally with a little blood upon their surface; the evacuations are more or less loose, are most frequent and copious during the night, and are attended with griping and occasionally tenesmus; sometimes the stools become scanty and composed of slime and blood, but generally they are feculent and in qua[redacted] very copious; if the disease however is not stopt, the evacuations get more frequent with less feculent matter in them, and this is occasionally of a clayey appearance; sometimes a considerable quantity of blood is contained in the stools, and in a few cases, pieces of the intestines have been discharged per anum; as the disease proceeds, edema takes place and the stools getting much more frequent are at last passed involuntarily, hiccup supervenes and in a few days the patient dies. Several of my patients at Seringapatam died in this manner; the disease running its course in a greater or less space of time.

The urine, in cases where the disease comes on gradually, gets often before the paroxysm of fever very high coloured and scanty, and, with perhaps the exception of a short period

about the cold fit, at which time I have observed it pretty copious and clear, it continues of small quantity and proportionately high coloured; when the disease however gives way, this secretion is generally among the first to become natural and until it does so, the patient can scarcely be said to be convalescent, or secure from the recurrence of a paroxysm of fever. I have had little opportunity of observing the Seringapatam fever in the female subject, altho' I have reason to conceive this sex, at least among the natives, equally liable to its attacks with the male; I have therefore had little opportunity of observing the disorders of the menstrual evacuation from this disease; as far as my experience goes however, I have reason to conceive that the most frequent period of relapse is shortly before the occurrence of this discharge and in one instance, the crisis on two attacks appeared to take place on the supervention of the menses, on each occasion, four days previous to their regular period.

I have mentioned that in the vomiting, a considerable bilious diffusion was generally found, but not more than is usually found in other cases after frequent vomiting, but without any increased secretion of bile; nor have I reason to suppose that any increase of this forms a

necessary or even a frequent attendant upon the disease. I have observed in four cases, three of which were slight ones, a degree of yellow suffusion of the eyes, which may have been owing to an increased secretion of bile, and in the cases of chronic dysentery, the stools were occasionally of a grass green colour, but I have not found any other symptom, either in the state of fever or in its sequelæ indicative of an increase of this secretion. Perhaps, indeed there may be a diminished action of the liver, and the copious bilious diarrhœa sometimes carrying off the disease, may give some countenance to this idea, as a critical sweat removes the diminished action in the skin; be this as it may, there is sufficient evidence in the clayey stools which sometimes were to be seen in the dysenteric cases, that, at least in these, there existed a deficient action in the liver.

The state of the perspiration appears to me to deserve particular notice; the first symptoms of an attack of fever depend upon, or are accompanied with a diminution in the excretion from the skin and I may venture to say that as long as this discharge is general, easily increased by exertion or by external heat, and has the natural effect of reducing the temperature of the body, none of the approaching symptoms of fever are

to be felt; in my opinion therefore, the chief means for preventing a relapse of fever are those which tend to keep the pores of the skin in an open and perspirable state; for, in a feverish subject, when these become shut, stimuli of the mildest description have their powers greatly increased in producing heat of the body, and this being accompanied with a dry state of the skin, restlessness, langour &c. supervene; these at first alternate with partial and scanty perspirations on the hands, forehead and breast, but on the approach of the cold stage of fever, or in the occasional chills which are felt previous to it, the surface becomes completely dried up, there is a disagreeable numbed feeling in the hands and skin, and pains are felt in the muscles, on moving any part of the body. This pent up state of the skin continues thro' the cold and hot stage of the fever, and when the last has reached its acme, a slight moisture begins to be felt on the forehead and hands, and afterwards extends to the rest of the surface. The sweat which occurs is more or less profuse, extending over the whole body, or confined to the forehead, breast and hands, and the lowering of the pulse, the diminution of the heat of the skin, and other symptoms of fever are in the same proportion.

Occasionally, as in those cases I call ephe-

meral, the crisis of the disease takes place in the skin becoming completely open and continuing so, after one paroxysm of fever; at other times, a partial and scanty perspiration takes place, a remission only of the symptoms is the consequence and a fresh paroxysm, preceded as before by a complete stoppage of the pores of the skin ensues; this may recur for several times, and the last paroxysm terminating in a general and profuse perspiration, a complete removal, in a greater or less time, of all the febrile symptoms takes place; these cases are what I have ventured to denominate critical remittent, while the intermittents of the same description, are where the perspiration is more profuse and the apyrexia consequently more marked, but the returning paroxysms are equally preceded by the pent up state of the pores of the surface, as in the remittent cases, and the crisis in the same manner is most frequently produced by a more profuse perspiration. The remittent cases of a chronic nature appear to be, where the reaction is not sufficient to produce a crisis by perspiration, the sweat, in this case, continuing throughout the disease, partial and scanty.

When a crisis has taken place and the symptoms of fever have disappeared, the skin continues in a highly perspirable state for some time,

longer or shorter, I conceive, in proportion to the antiphlogistic nature of the patient's diet, and perhaps the uniformly high temperature and moist state of the atmosphere in which he remains; sometimes this state continues so long that the tendency of the body to revert to the symptoms of the Seringapatam endemic, becomes lost and the patient has consequently no return of this disease, most generally however, some cause occurs by which the perspiratory process is again stopt before this occurs, and the consequence in a habit of this description is, an attack of fever. Conceiving, therefore, the stoppage of the perspiration to be a *sine qua non* preceding an attack of fever, I have judged the attending to the function of the skin important, not only as it regards the prevention of relapses of fever, but as connected with the diminution of the number of paroxysms, when an attack of fever has taken place; on such occasions by keeping up a state of moisture on the skin a paroxysm is often prevented ; in chronic cases, the habit of recurrence broke in upon and the disease more easily brought to a termination.

The animal functions were not much disordered in the fever which I witnessed at Seringapatam; previous to the attack, indeed, the

patients frequently complained of vertigo and in the commencement of the cold stage, there is often a degree of confusion of thought and alarm; sometimes also in the hot fit, there is a tendency to delirium, but although, especially in Europeans, considerable headache and sensibility to sudden impressions of light are often observed, I did not remark, excepting in six cases of natives, any great degree of affection of the sensorium; in three of these exceptions, the patients had been in a weakly state for some time and having been excused from duty were not brought into hospital, until a state of stupor or delirium had occurred, and two of these individuals did not recover from this state, but continued to sink until their deaths two days afterwards; the third got gradually better. In these cases it was impossible to ascertain the previous history, and it is doubtful whether this modification was purely from the disease or from other causes; one of the fatal cases was a Mussulman and the remaining two were Hindus.

The three other cases, where the patients were in hospital on the supervention of the affection of the head, were of the Mussulman caste. In two of them, the violence of the disease increasing after each paroxysm, about the 4th. or 5th. day after admission, delirium and stupor came

on in the afternoon with an increase of fever, altho' the skin never got very hot, nor did any symptom of high fever appear, the pulse as in all these cases feeling rather small and oppressed; after some days of almost continued stupor, more complete in one than in the other, they very gradually recovered their intellects, their pulses got more full and less frequent and no return of fever took place for some time. In the other case, the affection of the sensorium occurred after the patient had been in hospital 23 days, having had in this period occasional exacerbations of fever and considerable frequency of pulse increasing after each paroxysm but, as in the others, without much heat of skin or strength of pulse; the paroxysms now became attended with stupor and insensibility which went off on the remission of the febrile symptoms, but the case happening at the period of my quitting Seringapatam, I am not aware of its termination.

In the months of October and November, 10 cases occurred, where the symptoms of the beriberi in various degree were superadded to those of fever; in one case they occurred a few days before the febrile attack; in others along with the first symptoms of fever, and were discovered in a few, after the fever had continued

for some time; in the latter cases, the paralytic affection of the legs was preceded and accompanied by a degree of frequency of the pulse not referrible to fever, and continuing after the symptoms of that disease had disappeared; and in all, there appeared the same tendency to a termination in edema as in the cases at Ellore, of which I have formerly given an account to the Board; I shall content myself therefore at present with stating, that, the complication of this disease with the endemic of Seringapatam gave the latter a disposition to become chronic and irregular and rendered it very difficult of removal.

My limits will not admit of my saying much on the debility, disorders of the senses, restlessness, and want of sleep, which are present in this fever, I shall merely state with regard to the first of these, that after the first few paroxysms of chronic fever as well as in relapses, the debility is not very remarkable when there is moisture on the surface, as in the remission or intermission, it being no uncommon thing for servants and others to be found attending to their duty notwithstanding of daily or every 2d day attacks of fever nor is it extraordinary to observe people of all descriptions attacked with shivering while engaged in any employment, which they return

to in a few hours upon the attack leaving them. If the disease however continues long, or if frequent and tedious relapses take place, a great degree of emaciation and debility is engendered and edematous swellings sometimes make their appearance.

The headache which is connected with this fever appears to be of two kinds, the first being accompanied with an increased flow of blood, as evidenced by the beating of the arteries, the flushed face, tinnitus aurium, and the state of the eyes, which are painful on pressure, on being exposed suddenly to the light and on motion, and have also their blood-vessels often considerably enlarged; and the second being perhaps more of a nervous nature, being a disagreeable pain of more or less intensity and extent and apparently seated in the integuments of the head; the former chiefly attends the hot stage and continues more or less thro' the remission of a critical remittent, disappearing entirely on the crisis of the disease and the latter appearing to be more connected with a state of the system following previous excitement, frequently ensues on the accession of the state of moisture on the skin, and is often very distressing to patients long after the symptoms of fever have disappeared; it has been alluded to in describing the premonitory symptoms of fever.

During the period which this report embraces, very few instances appeared of visceral disease in the subjects of fever; some of the cases, perhaps, of chronic dysentery may have been attended by affection of the liver, and likewise, the few cases of bilious suffusion of the eyes, but neither in the Europeans or natives, altho' more so proportionately among the former than in the latter, was any appearance of visceral obstruction, at least in a tangible form, at this time, a frequent occurrence. In a few instances however, during the hot stage of the fever, a dull sensation of tightness, sometimes of pain was experienced in the region of the spleen and on placing the hand on the edge of the ribs and the patient taking a long inspiration, this organ could be felt to pass under the fingers; in one or two individuals also, a complete ague-cake could be felt, and these were remarkable as not being in the situation of the spleen, but immediately under the integuments, below the margin of the ribs and considerably nearer the linea alba than the natural position of this organ, these cases however, were very rare, and upon the whole obstructed viscera in the cases which came under my notice were not of common occurrence.

The state of the skin with regard to perspira-

tion, I have before mentioned; it is also found of various degrees of coldness and at the same time dry and rough, as in the cold stage; hot and dry, but the patient continuing to shiver and at the same time feeling cold, as in the beginning of the hot fit; excessively hot and dry, and appearing distended in the height of the hot stage, warm and moist in the course of the sweating process, and cool and moist, when the febrile paroxysm has passed over. The colour of the skin in natives, of course, admits of little distinction; in Europeans however, before the paroxysms of fever, a degree of paleness of the countenance is the first symptom which attracts the attention, and excepting in the hot stage, where, the face, in sanguineous habits especially, gets flushed and red, the complexion continues pale and is a long time of returning to its natural hue; that which is naturally of a pallid appearance, is changed into a colour which is more of a waxy or whitish degree of paleness, and in two or three officers where there were symptoms of disordered liver, a sallow or hepatic hue took place.

The dropsical swellings which came under my notice as connected with the endemic of Seringapatam were of two descriptions; one, succeeding to repeated attacks of fever or occurring

from chronic dysentery in feverish subjects, or from a combination of both diseases and preceded by emaciation and debility; the anasarca debilium of Cullen. In this form of dropsy, the swelling commenced gradually in the feet and extended itself upwards slowly, the principal swelling however being always confined to the lower extremities, although occasionally the eyelids are found heavy in the morning; it occurred in nine cases; in one of them, a Mussulman from repeated attacks of fever alone; in four, two of which were Hindus and two Mussulmans, from fever combined with dysentery, and in the remaining four, all of whom were Mussulmans, the anasarcous symptoms took place in individuals who had formerly been the subjects of fever, but they were more immediately occasioned by dysentery alone.

The other description of dropsy occurred in 19 subjects, all of which had at a former period been affected with fever or had the dropsical swellings combined with febrile symptoms; four Hindus had the anasarca without fever, thirteen, 12 of whom were Hindus and one a Mussulman had fever commencing at the same time as the dropsical symptoms and this continued along with the latter, sometimes indeed, remaining after they had disappeared; and 2 Mussulmans had

dropsy supervening upon beriberi and fever. This species of anasarca came on much more suddenly than the foregoing, having been often perceived in the course of one night; it is also much more generally diffused from the commencement, often occupying the whole body and is in general attended with more of the characteristic symptoms of anasarca than the preceding; it generally disappears in the course of three or four days from its occurrence.

I have only further to mention on the subject of the various symptoms which usually make their appearance in the Seringapatam fever, that sometimes in the hot stage a sort of nettle-rash was observed to come out on the skin, disappearing on the remission of the symptoms; that in a few instances, the attack of fever was preceded by glandular swellings in the groin; and that in one or two cases, affections of the parotid glands succeeded to the febrile symptoms.

I now proceed, to give the result of my experience in as brief a manner as possible, upon some other facts connected with this disease.

It is difficult, in a battalion composed of men generally from 20 to 40 years of age, to ascertain exactly the period of life which secures the greatest immunity from attacks of this endemic; I am inclined however to think, that those from

20 to 30, and particularly from 20 to 25 years, are most liable to be affected with it, both primarily and in the form of relapses, as the following table will show.

Table shewing the ages of individuals attacked with fever.

Primary Attacks.		Relapses.	Total.
Under 15 years of age	23	18	41
,, 20 ,,	77	71	148
,, 25 ,,	323	420	743
,, 30 ,,	194	178	372
,, 35 ,,	49	33	82
,, 40 ,,	34	25	59
,, 50 ,,	46	9	55
,, 60 ,,	6	1	7

It has already appeared that the Hindus and Hindusthanees were more generally attacked than the Mussulmans, but, if we may judge from the few half-casts in the corps being all subject to fever, this class of individuals are the most subject of any of the natives to its attacks. Upon the whole, I have had repeated reason to remark in the natives, that stout made men with large limbs and the general strength of their constitutions manifested in their rough and hairy

skins, masculine voice and general appearance, especially, when these occur in persons after 30 years of age, are least liable to be seized with fever at Seringapatam, and that when these are attacked, their disease is generally, critical or intermittent and is seldom followed by any return; on the other hand, young lads, whose constitutions are not yet arrived at maturity, and who are of a delicate formation and in every respect the reverse of the foregoing, appear to be most liable to the disease and therefore, the Hindus and Hindusthanee sepoys being more generally of the latter description, while the half casts were entirely so, and the Mussulmans being more of the former and using also a more nourishing diet than the Hindus, these differences appear to me to account for the one class of individuals being more subject to fever than the other.

With regard to the greater or less liability of the European constitution to the attack of this fever, I am inclined to think the same idea is very applicable as above stated, but I have not been able from the small number of individuals under my eye to form a decided opinion upon the subject; the attacks also in these individuals being referrible as much to the agency of external circumstances as to any constitutional pre-

disposition, while in one or two instances of immunity from the disease for a considerable period, I have been unable to reconcile such a circumstance with any preconceived opinion upon the subject. I can state however, altho' not present with the battalion during the last two months of the period, that with the exception of the commanding officer, who was older than any of the rest, and of extremely regular habits, none escaped the disease who remained for 12 months at Seringapatam, one individual was not attacked having been nine months there, and two others escaped who were with the corps only a few weeks, but all the rest, 18 in number, had attacks at a greater or less period after their arrival at that station.

A striking feature of the Seringapatam fever is its tendency to return upon those who have once been affected with it, and this not alone by the predisposing cause of the disease continuing to exert its external influence, but by some change induced by the fever in the constitution of the individual which renders him liable to a return of the disease when far removed from the influence which originally caused it; the nature of this change it is impossible exactly to know, nor shall I attempt to discover why this fever, or any other of a nature allied to it should dispose

the body to have a return at intervals of the febrile symptoms, suffice it to say, that for some time after an attack of fever, the skin continues uniformly cool and readily perspirable, the pulse natural and soft, sometimes indeed slower than natural, and but little increased in frequency on the stimulus of exertion, food &c. being applied, these stimuli at this time rather increasing the excretion from the skin, than having the effect of heating the body or increasing the frequency of the pulse; the appetite also at this time is good, sometimes inordinate, but its full gratification is followed by little or no digestive fever; the patient also enjoys sound sleep, and his body altho' perhaps weakened by the previous fever feels alert, and his mind cheerful, his powers of thought becoming clear, unclouded and perfectly at command.

After an interval however of various duration in different individuals and under different circumstances, the premonitory symptoms of fever as detailed above gradually make their appearance and are particularly characterised by the facility of quickening the pulse, and increasing the heat of skin and by the scantiness and partiality of the perspiration. The effect of the attack of fever which follows these symptoms seems to be the reducing the body to a healthy

state and the febrile symptoms therefore must be considered as the result of an effort of nature to produce this effect; the state of the system preceding the accession of fever being looked upon as the immediate cause of its taking place.

This unhealthy state of the body rendering an accession of fever necessary for its removal and returning as I have frequently observed in a periodical manner may perhaps be somewhat allied to that state producing the periodical occurrence of the menstrual discharge in women, but I merely suggest this as an idea which my limits will not allow me to discuss further. I am of opinion however, that this highly excitable state of the system being prevented from taking place, relapses of fever will also cease their recurrence, and I think that after it has occurred, I have occasionally observed it removed by medicine, without the assistance of a paroxysm of fever.

In table No. 1. of the Appendix to this report, I have shown the number of relapses in each month, their different types and the casts of the individuals in whom they occurred; in No. 2. is exhibited the proportion of those having no relapse, or those having one, two, or more, to the original attacks, as also the months in which the primary attacks followed

by these peculiarities occurred; and in No. 3. the number of days between the last paroxysm of one attack and the first of the next for four relapses is attempted to be shown; while I would refer to the Table in page 33, to exhibit the age of those most subject to relapse; and the type of the original attack most generally followed by a return will be taken notice of hereafter.

I must state however, that there is reason for considerable doubt as regards the propriety of placing much dependence upon these documents which I have referred to, for notwithstanding that the patients on their admission into hospital, almost invariably declared, that they had been attacked either on that or the preceding day, and in the case of relapse, that they had not had any return of fever since they were last discharged from hospital, I am inclined to think from observation on those who had no reason to conceal the truth, that sepoys had often attacks of fever, which a dislike to the confinement of the hospital and separation from their families induced them to postpone reporting as long as possible, and that accordingly many slight or ephemeral attacks of fever occurred in the battalion of which I had no intimation; however, as far as dependence is to be

placed upon these tables, they tend to show, that, in much the same proportion as people are liable to the first attack of fever, are they liable to relapses, that accordingly the age of from 20 to 30 is most subject to these, and Hindus much more so than Mussulmans ; that, about the half of those who have had one attack, have a return while remaining at Seringapatam in the course of a few months and that about the same proportion, viz. a half, of those who have had one relapse have also a second in the same circumstances and so on ; and thirdly, that, the most common period for a return of fever is from 10 to 20 or 30 days after the last paroxysm of the preceding attack, the chance of a relapse accordingly diminishing in proportion to the period which has elapsed from the previous attack.

The above uncertainty with regard to facts depending on the evidence of the sepoys, throws also a shade of doubt over the accuracy of the deductions from my next subject of enquiry, viz. the influence of the changes of the moon in causing attacks of fever. 'This idea which is held as incontestible by the old feverish subjects among the Europeans at Mysoor and Seringapatam appears to me, to be not altogether without foundation, but whether the effect is from any direct influence, or, which I think more

probable is produced thro' the medium of a change in the state of the atmosphere, I do not think it necessary to enquire; however, that a particular state of the air is accompanied with more attacks of fever than another and that this state is often present at the time, particularly, of the full moon, are facts palpable to very slight observation; perhaps therefore, the small increase of admissions into hospital about this time may be owing to this cause and that such increase does occur, the Table No. 4 in the appendix will be sufficient to shew; there being according to it more than double the number of seizures upon the 14th. and 15th. days of the moon, than upon that on which the fewest took place and I am inclined to think that I have observed it even more particularly the case among those more immediately under my own eye; I must remark however that I cannot attribute such a great influence to the moon in feverish subjects as is allowed to it by the more determined advocates for this opinion, who assert that they have often been astonished at the correctness with which they have detected a change in the moon, simply from their own feelings; if so powerful was the effect of this luminary, it might be expected to manifest itself much more evidently in a body of upwards of 700 men

who had been the subjects of fever, than the Table above referred to tends to display, and out of such a large number of subjects we might expect additions to the sick list at these periods by hundreds, whereas it appears that the increase is barely observable on the collected observations of eleven months and this only at the period of the full moon; it is also no small argument against the idea of the influence of the moon in exciting attacks of fever, or of having any effect upon feverish subjects, that such a circumstance has never, even, suggested itself to the imaginations of the natives.

I have mentioned before that it appears to me to be of importance to attend to the duration of the disease, as it regards the treatment; I have therefore in table No. 5. attempted to exhibit the number of days which each individual remained in hospital, and this will give some idea of the usual length of the attacks, and also of the number of critical and chronic cases which came under my observation. In these cases, unless weakness or some other cause forbade it, it was invariably the practice to discharge the patients from hospital on the 4th. day of being free from fever; by taking away therefore this number of days from the cases in the table, the usual period at which a crisis of the disease took place will

be seen; thus the greater number of individuals were discharged on the 7th. day after admission, by which it appears that the crisis of the disease took place in more cases on the 3d. than on any of the other days of the attack, a fact, which independent of this table I have often had occasion to remark.

The subject of postponement or anticipation of the paroxysms appears to me also of importance in regard to the treatment. The former is not an uncommon circumstance in critical cases, each paroxysm, either occurring throughout the disease at a later hour than the preceding, and the last, which is generally the 3d. or 4th. ending in a crisis; or paroxysms may occur for several periods at the same hour, but the last is considerably postponed and there is no return. The degree of postponement varies from 4 hours or upwards to where it is barely perceptible, and in these cases I have observed it to be a favourable symptom; occurring however in chronic cases, it has been almost always attended with a tedious disease, and was often the effect of opium given previous to the usual period of fever; it most frequently attends quotidian attacks, and these observing generally a certain period of the day in their occurrence, I have often remarked, that when in the course of postponement, the

paroxysms have changed the original day of their attack and have come round to the usual period at which tertians occur, the disease has taken on this type and vice versa; in tedious cases of this description also, the paroxysms are sometimes stationary for several days, and then have occasionally postponements alternated with anticipation in their occurrence.

The latter symptom is more remarkable than the other, anticipations being commonly at longer periods than postponements; the type of the disease which this peculiarity most generally accompanies is the tertian, and the usual day of the fever is frequently, in the course of several anticipations, changed by their occurring at 3 or 4 hours, and thus passing thro' the whole night and day the paroxysm at last takes place at the same hour at which the fever usually occurs, and it accordingly ensues one day earlier than it would have done without anticipation. This symptom sometimes shows itself at a regular period of 7 or 8 hours, but anticipations of 2, 3, and 4 hours, appear to be more common, they certainly are much longer than the usual period of postponement. Anticipations are almost always accompanied with a chronic species of fever, particularly if they do not manifest themselves from the commencement of the disease, the only

instance of anticipation which I have observed as common in critical cases, being where the last paroxysm anticipates before the crisis, which is not unusual.

I now proceed to mention briefly the number and peculiarities of each type which I have alluded to as having come under my observation and first of the ephemeral cases. Thefe consisted of one paroxysm and varying in the time taken up in the body returning to its natural state, have been distinguished into ephemeral remittent and intermittent. The number of these cases, the month in which they occurred, the caste of the individual affected by them, and there being cases of relapse or primary attacks, will appear from Table No. 6 in the Appendix, I I shall here only state, that about one-sixth of the whole attacks of fever were of this description, that the remittent and intermittent types were of very nearly equal prevalence, both in the primary and relapsed attacks, that the Hindus and Hindusthanees had proportionately more of these cases than the Mussulmans, and that the months in which the greater number of these cases occurred were September, December, and January. More than half of those whose primary attacks were ephemeral had no return of fever within the period included in this report,

and I have only to add that the attacks of fever terminating in this way took place at all hours of the day and night.

The quotidian type of fever was the most common which came under my observation; it is to be noticed however, that the number of those which were properly entitled to be ranked under this head has doubtless been considerably increased by the addition of many cases of double tertian, which circumstances as hereafter mentioned prevented the possibility of distinguishing; with this remark therefore, I shall refer to Table No. 7 to show the same circumstances in regard to those cases I have included in the head of quotidian remittent and intermittent as in those of one paroxysm; from this it will appear that nearly one half of the whole number of febrile attacks have been referred to this type; that the remittent cases were nearly double those of the intermittent; that the proportion of the different casts subject to this form of fever is in the remittents much in the proportion of the number of each who were attacked, but in the intermittents a greater proportion of the Mussulmans had their original attacks of this type than of the other casts, altho' in the relapses, the Hindus again have triple the number of the former, and finally, that the greater number of

cases of this type both remittent and intermittent took place in the months of November, December and January being the period of the greatest prevalence of the endemic. This form of the fever appeared to be rather more liable to a relapse than the ephemeral, more than half of the original cases having had a return and this occurred equally in the remittent, and intermittent forms.

The varieties of this type are first distinguished as before mentioned into critical and chronic; the former again varies in having its paroxysms occurring at the same hour; or as being attended with anticipation or postponement, each paroxysm taking place at a later or earlier hour than the preceding, the last terminating in a crisis; or in the paroxysm occurring in an irregular manner for 2 or 3 days, followed in the same manner by a sudden lowering of the pulse to a natural standard, and no return of the fever, and it also varies in the last paroxysm only, being irregular, either from anticipation or postponement, the latter being most generally the case, occasioning sometimes a tertian period, at others a quartan and frequently a single paroxysm takes place after several quotidian ones, at a period even longer than the last mentioned, either case being followed by no return of fever.

A great proportion of the quotidian remittent cases were of either of the above varieties, and the common course of these cases, the most frequent of occurrence which came under my observation, was, having daily paroxysms for 3 or 4 days the pulse varying from 76 to 84 and 90 in the remissions and after one of the paroxysms, generally the most severe, it is found down at the natural standard, with a removal of the other symptoms of fever and followed by no future febrile accession. The individuals most liable to this form of fever viz. the critical quotidian, as also to the critical variety of the tertian types were generally those of a vigorous and plethoric constitution, and in short all those whom neither disease nor a naturally weak constitution, disposed towards the chronic variety.

With regard to this, it was often attended with phlogistic symptoms like the critical at its commencement, but after several paroxysms these were not so prominent, the tongue especially which was at first florid or furred, generally got quite clean or occasionally pale after the disease had continued for some time. It was frequently accompanied with postponement of the paroxysms, either of one or of several successive ones; sometimes however, especially about the commencement of the disease there were anticipa-

tions and occasionally these alternated in the progress of the attack; irregularities however, were by no means infrequent, and often in these cases a tertian, quartan or longer period was recorded; sometimes indeed, cases occurred of a quotidian type at the commencement which after a few paroxysms put on the tertian form for many intervals, and these occasionally left the patient as a tertian, sometimes however reverting to the quotidian type. The tertian paroxysm in a few of such cases occurred at the same hour as the quotidian, but often a curious circumstance was observed regarding this point, viz. that when in the course of postponement, the quotidian, paroxysm approached the usual hour of the tertian attack, it put on this type and on reverting to the quotidian the accession of fever took place at its former hour of occurrence, altho' in a few instances however, the tertian paroxysm came on at the same hour of the day as the quotidian had done, and vice versa. Sometimes also, without previous postponement, the hour was suddenly changed from the quotidian to that of the tertian and the latter type was assumed.

It will here be observed that I am led to support the idea of particular types of fever having a greater tendency to recur at one hour than at

another and this opinion is founded upon many facts which it is unnecessary here to bring forward in support of it; it has been with much diffidence however, that I have been led to adopt a different idea with regard to the particular hours at which these occurrences take place from that laid down in Cullen's Nosology, but I have seen so many cases in favour of what I advance that I feel confident very little experience in the Seringapatam endemic will corroborate my opinion upon this subject. In the Nosological arrangement above specified, it is mentioned that quotidians occur in the morning, tertians at noon, and quartans in the afternoon; with regard to the last of these, my observations entirely agree, having only seen the paroxysms in one case of quartan occur in the forenoon, but quotidians were so far from even frequently occurring in the morning, that in almost every case where a paroxysm took place at this time of the day, or from between midnight and 11 a. m., the type was tertian, or if in such cases, a paroxysm occurred daily, each alternate one was similar in its symptoms, being double tertian; and as I have mentioned above, quotidians changing into this type, at the same time changed their hours of febrile accession from the afternoon or evening to the morning or forenoon, while

in like manner tertians becoming quotidians the afternoon was almost always the period at which the daily paroxysms occurred; this therefore or from 11 a. m. till 6 or 7 p. m. I conceive to be the most general range of the attacks of quotidian and they most frequently take place about 1 or 2 p. m.; this is more especially the case with regard to the intermittents of this type, the remittents more frequently occurring a little earlier in the day. I have mentioned that quotidians sometimes changed into tertians; almost all the cases also which turned out quartan had quotidian attacks in some part of their progress.

With regard to the fevers of the tertian type, these are necessarily divided into single and double; in other words, into those having only one paroxysm of fever in the 48 hours, and those having two in the same space of time, that is, one accession of fever daily, but differing from quotidian, inasmuch as each alternate paroxysm only was alike in the hour of its accession, or in its symptoms; one case indeed occurred of another variety of double tertian, viz. where there were two paroxysms on one day and none on the next, but this form, was so rare that I may be excused from taking further notice of it and my observations on the double

tertian only apply to the former description of cases.

In table No. 8 I have endeavoured to show the same circumstances with regard to single tertian remittent and intermittent, as I have already done with regard to quotidian. From this table it appears that about one-fifth of the whole cases of fever were of the tertian type, that the intermittent cases nearly doubled the number of remittents, being quite the reverse of the quotidians, owing to the longer interval of the former admitting of the pulse &c. coming down to the natural standard previous to the accession of a fresh paroxysm; that the tertian type was as often observed in the primary attacks, as in the relapses, that somewhat more than the general proportion of tertian cases was in Hindus, and that the period of the greatest prevalence of this type was the cold months of November December January and February. More than half of the primary attacks had no return and the remittent cases had comparatively a greater number of this description than the intermittent.

The same varieties of tertian have been observed, with regard to the period of duration &c. as in the quotidian, altho' the critical is not so common a variety of single tertian as of the

former type; it is however often well marked and I have inserted in the appendix (No. 9.) a case of critical tertian remittent in an officer which is copied verbatim from my Journal taken at the time and which could be corroborated by numerous cases of sepoys if necessary; it is however to be remarked that the tertian type both single and double appears more common among Europeans than the quotidian form of fever. The same circumstances of anticipation and postponement were observed in the tertians, as described to have occurred in the quotidians, altho' the latter circumstance was of extremely rare occurrence and the former considerably more frequent than in the cases of daily paroxysms.

I have mentioned above that quotidians sometimes took on the tertian type and in like manner tertians occasionally changed into a fever of a quotidian form; notwithstanding however of my denominating such paroxysms, quotidian, I have reason to think that many of these cases ought properly to have been considered double tertian and indeed, in cases of the latter type, when the daily paroxysm occurs at much the same hour every day, or is attended with much the same symptoms, it is extremely difficult to distinguish the case from a real quotidian,

and in such instances to assist in the distinction, the previous or consequent tertian type is to be taken into consideration; the greater number of those cases however which I have distinguished as double tertian were attended with no ambiguity as to their proper designation; almost all of these which I have inserted in Table No. 10 of the Appendix, had each alternate paroxysms at the same hour, one of which was at that I have above mentioned as the usual period of the tertian paroxysm, and the other at which I have described as the usual quotidian; thus the paroxysm of one day took place at 3 or 4 p. m. and that of the following at perhaps 10 a. m. and in these cases it appeared as if the later, or one at the quotidian period was the double paroxysm, or rather, that in a constitution having a tertian tendency, an attempt is made from some cause or other to establish a paroxysm on the preceding day, but which being incomplete, the proper paroxysm takes place at the next tertian period viz. on the following morning; thus the later paroxysm is of less degree, seldom preceded by a very sensible cold fit, more irregular and unequal in its symptoms and followed by less diminution of the fever, than the attack which takes place next morning.

I am somewhat inclined indeed to think that

in most cases of tertian, a slight attack, frequently not perceptible, occurs on the previous afternoon or evening of the well-marked paroxysm which occurs every 2d day, and thus that the doubling of the disease is owing to this feverish accession becoming more prominent; at least in many cases which have been considered as single tertian, I have found a great degree of frequency of pulse in the morning of the day on which the paroxysm took place, referrible, I am inclined to think to a degree of double paroxysm on the preceding evening, and I have often observed attacks of tertian come on in the following manner viz. on the patient's coming to the hospital in the morning, he describes his having been attacked on the preceding evening, and in the forenoon of the day of admission, he is seized with his regular paroxysm of fever.

The causes which tend to excite this febrile accession on the preceding afternoon, or, if in tertians there is always a degree of such accession, the reason of its being more prominent in certain cases, in other words the causes of the doubling of tertian, are not always very evident. It has been observed to take place after a smart purge, the exhibition of an emetic, the mouth getting sore from calomel, and after a dose of

after

laudanum, but such an effect from these medicines was by no means general, and doubling was often present from the commencement, or supervened in the course of the disease where no circumstance could be referred to, as the cause. It has sometimes been observed to take place for one paroxysm previous to the disappearance of the original disease, while in other cases of double tertian from the beginning, or for several intervals, the double period being prevented by a dose of opium and the disease accordingly getting single, the single paroxysm has afterwards yielded to the same remedy. I have not observed in such cases of the disease getting single previous to its leaving the patient, or on this occurrence taking place at any period of its progress, that it is owing to the continuance of what I have denominated the double paroxysm and the dropping of the other, the skeleton if I may so express myself, of the disease has always been the paroxysm occurring early in the day, and the disease doubling or otherwise depends upon the presence or absence of the later paroxysm.

The accessions of fever in the double tertian are either divided by a remission or an intermission, the former being most commonly met with betwixt the late paroxysm of one day and

the early one of the following, that is in the space of time which is shortest betwixt the paroxysms, and the latter being generally found betwixt the early paroxysm and the late one of the next day; sometimes however a remission only occurs between either paroxysm and this type like the others has accordingly been distinguished into double tertian, remittent, and intermittent, and from the Table No. 10, containing the cases of this form of fever, it appears that the former were rather more prevalent than the latter, although the number of cases does not warrant us in establishing any other facts worthy of notice. It may be remarked however, that the double tertians formed about one fourth of the whole tertian cases, that this type was as common in the primary attacks as in the relapses, and that it was most prevalent in the months of December, January, and February. This form of fever appeared more subject to relapse than any of the others, there being scarcely one-third of those who had it as the type of their original attacks who escaped returns of fever before many months.

It put on the same appearances giving rise to the distinction of critical and chronic as the other varieties of fever, but the latter form was not very common, being only seen in the cases of

occasional doubling in the chronic form of single tertian; the former however was of frequent occurrence and a great many instances of it were confined to three paroxysms of fever, the first and last, at an early period of the day, and the middle one, generally in the afternoon. In these cases however, I think it probable that an accession of fever had taken place on the evening preceding admission, altho' not reported, and that the disease accordingly consisted of two intervals of double tertian followed by a crisis.

Anticipation, and postponement, of both paroxysms were not unusual, particularly the latter and occasionally the late paroxysm anticipated, and the earlier postponed, so that in the course of a few days, the gradual approximation of the hours made the disease put on the appearance of a quotidian, upon which occurrence, the paroxysms ceased to recur in some instances, while in others the quotidian type was established.

I shall conclude this subject of the double tertians by referring to the case of Chingulroy Dos in the appendix, No. 11, which is given without any alteration from the hospital Journal and which occurring shortly after the arrival of the corps at Seringapatam and before I had remarked the peculiarity of the double tertian type, will be regarded as an unbiassed view of this

form of fever. Latterly my attention has been more attracted towards this subject, by this being the type under which relapses of the disease have made their appearance in my own person, altho' this however has subsequently changed into single tertian. Connected with the subject of tertian, inasmuch as they have been incorporated with the cases of that form of fever, I have to mention that several instances of what might be denominated double quintan have been observed; the paroxysms in these cases, occurred every 2d. day as in tertian, but each alternate paroxysm only occurred about the same hour, as for instance, a patient is attacked at 5 p. m. of the 9th and has the next paroxysm at 7 a. m. of the 11th. He has again an accession of fever at 7 p. m. of the 13th, thus making the first and third paroxysms at the same time of the day, but a period of 96 hours or the quintan interval becomes that of the fever which having two paroxysms in it accordingly forms what might be denominated double quintan; several well marked cases of this occurred, but a repugnance to innovation, has induced me, as I have already mentioned, to class them as single tertians.

The cases of quartan which came under my observation afforded some of the best instances

of an intermittent becoming chronic, and in these, the habit of recurrence was extremely tenacious of its hold on the constitution, and resisted many means which were used to break in upon it. A few cases indeed occurred of only two paroxysms with a quartan interval betwixt them, but I do not consider these as proper quartans, none of them having any of the other usual symptoms of this type, nor any other quartan periods in their former or after attacks.

Those which I consider real quartans occurred in all habits, but chiefly in men of a mature age and proportionately a greater number in Hindusthanees than in the other casts.

The quartan period seldom occurred distinctly from the commencement of the disease, or in the primary attacks of the individuals affected with this type; it more generally was observed after several irregular paroxysms, occurring at all hours and chiefly of the quotidian type, but sometimes of the tertian, and in these the tertian paroxysms were most generally observed at the hour of quartan, viz. the afternoon or evening, while the quotidian accessions of fever were very frequently in the forenoon; with these was occasionally blended a quartan interval, and after a few of these irregularities, the disease put on its regular quartan type, with all its ob-

stinacy in resisting the means used for its removal. In a few instances however, the quartan period was distinctly formed on the primary attack and from the admission of the patient into hospital, these however were rare, there being only 3 out of 36 cases of quartan, which occurred as primary affections, the original attacks of the remainder, and occasional relapses previous to the quartan period showing itself distinctly, being, as I have stated before, generally quotidian, often of an irregular nature, that is, occasionally with one or two days absence of fever, and the paroxysms occurring sometimes early in the forenoon, or morning, and at others in the afternoon, evening, or night; sometimes also, a tertian type was observed in these cases, the paroxysms of this being generally in the afternoon or evening; in some of these irregular cases I have observed the disease extremely difficult of removal.

It has been found impossible to reconcile these irregularities to the definitions of the different varieties of quartan and they have been classed with the cases to which they had the greatest similitude, generally with the quotidian; a few instances however of what may properly speaking be called double quartan came under my notice, and these were of two kinds;

1st, where there occurred a paroxysm on two successive days and none on the following, answering to part of the definition given by Cullen "quartana quæ ex quatuor diebus tertium tantum a febre vacuum habet," but the remainder I have not been able to observe, viz. "paroxysmis quarto quoque die similibus;" and 2ndly, having a paroxysm occurring at the end of every 36 hours, or two in the course of 72 hours, the quartan interval; this I have not seen mentioned elsewhere, but my attention was forcibly attracted to its occurrence in one or two instances of the fever at Seringapatam. Both of these forms of fever however, whether styled double quartan, or irregular cases of quotidian and tertian occurred but rarely, 8 cases only having been observed, all of which were primary attacks and no more than one which was of the latter description, of double quartan, showed a tendency to single quartan afterwards.

I have only further to add on the subject of quartans, that in some instances the pulse came down to the natural standard shortly after the paroxysm while in others it continued frequent, but at the same time the skin cool, until the supervention of the next accession of fever; the greatest prevalence of this type was observed in the months of January and February.

It only remains as regarding the subject of the different types of fever, to say a few words on what I have called irregular remittent fever of a chronic nature. This appeared to be the produce of the endemic in constitutions not possessed of sufficient power of reaction to bring on a crisis of the disease. It was characterised by exacerbations of fever continuing to recur at irregular hours and intervals, with considerable frequency of pulse, and a degree of heat and scaly dryness of the skin, remaining in the remission, but without any severe phlogistic symptoms, or, after several paroxysms, much failure of the appetite or general debility, and for the most part quitting the patient on his attaining a sufficient degree of strength to enable the system to withstand the tendency to a recurrence of the paroxysms of fever; this however occasionally taking up a period of one or two months; sometimes, especially in individuals of weak constitutions, accustomed to deficiencies in food, clothing, habitation &c. dysentery and œdema took place terminating in death.

The number of cases which appeared under this form of fever was 72, two thirds of which were primary attacks, and it was much more prevalent in the first months after the arrival

of the 11th Regt. at Seringapatam, which circumstance may perhaps be somewhat owing to the season of the year, but perhaps is also to be attributed in some degree to the length of residence at the station, to the subjects of it having been more liable to be seized with fever and to the circumstance that relapses are generally much more regular and referrible to peculiar types than their original attacks. This irregular form of fever was equally prevalent in all casts, and about one third of those having it as the type of their primary seizure with fever, had no return during the period comprised in this report.

Having thus endeavoured to give a brief view of the different types of the Seringapatam fever, I have now to make a very few observations on the general prevalence of the endemic during my sojourn at Seringapatam, but it may be proper in the first instance to premise a short description of the situation, climate and seasons of this pestilential station, and this will naturally lead to the few remarks I can make on the cause of this endemic, and its greater prevalence at one period of the year than at another.

The country of Mysore, may be described as being a table land of primitive formation, at an elevation of from 2 to 3000 feet above the level

of the sea, the surface of which is generally speaking of an unequal and uneven nature, and the soil composed of a ferruginous clayey and more or less sandy description. Its appearance is diversified, by the occurrence of various hills of greater or less magnitude generally composed of bare granite rocks and stones intermixed with sandy depositions; and by vallies differing in their depth and abruptness of descent which give passage to the various rivers which intersect the country. In many of these vallies, about the bottom and sides of many of the hills and along the ghauts which form the boundaries of Mysore on its southern and western aspects, as also in many detached places on the table land are situated extensive and thick jungles, while in other places, the appearance of the country is equally barren and unfruitful and this is particularly the case with that in the vicinity of Seringapatam.

The island and fort of this name, at the height of 2000 feet above the level of the sea are situated in one of the vallies above mentioned, through which flows the river Cauvery, which dividing into two nearly equal branches, by their re-union at the distance of from 3 to 4 miles thus forms an island which at its greatest breadth may measure about a mile and in its length extends to the distance above mentioned.

The Cauvery at its division when full is a stream about half a mile in breadth, but during the greater and that the most unhealthy part of the year, it forms a clear and limpid stream rolling along with considerable rapidity among the immense masses of granite, of which its bed is composed, and is forded with facility in almost every situation for at least 7 months in the year, while during the remainder, having filled shortly after the commencement of the western monsoon in the month of June, it rolls along an immense expanse of muddy water stretching from bank to bank and gradually falling, by the end of October or beginning of November it becomes fordable, leaving a clean stony bed without any of the usual exuviæ which are deposited by rivers passing thro' an alluvial soil, or any muddy pools or offensive marshes which might be supposed to give rise to effluvia productive of intermittent fever.

The ground on each side presents an irregular and gradual acclivity, a considerable part of which, being that nearest to the river is formed into rice fields, the cultivation of which is divided into two seasons, one portion being sown in May, and the crop reaped in December, and another is sown in February, and the crop reaped in July; these paddy fields therefore are never wholly dry

excepting from December to February, and it may be remarked that during the remainder of the year, notwithstanding the general crops being as above mentioned, there are occasional patches in all stages of growth to be met with. The rice fields here mentioned are watered by canals which run along the side of the declivity on each bank of the river and draw their supply of water from the Cauvery at some distance.

Beyond the canals, the country is unequal, with rising grounds and hills studded over it composed of granite rocks in a state of decay, and the soil is in general sandy, hard and dry with occasionally a considerable intermixture of stones. The crops which along with a few trees are seen near to various small villages sprinkled over the country are of that description which requiring no irrigation for their cultivation are accordingly denominated dry grains, altho' in occasional hollows and vallies, means have been found to cultivate a small proportion of paddy field. At the distance of 5 or 6 miles from Seringapatam, the country has risen to a considerable height above it, and this is more abrupt on the northern than on the southern side of the valley, but even at Mysore at the distance of 8 miles it amounts to 200 feet while on the northern side it is equally great, if not more so at half the distance.

The face of the country here is much as before described; the structure is entirely primitive, the soil, where any, being composed of the mouldering remains of the granite and quartzy rocks and hills which are seen in every direction and affords but a poor sustenance to the few leaves of grass which in the rainy season slightly cover its surface. In the hot period of the year, the appearance of the country in general near to Seringapatam is of the most desolate description; the cheering green of the paddy fields is at this season changed into an extent of dry parched up clayey ground and beyond this, on the rising grounds, not a symptom of vegetation, excepting an occasional tree is to be seen; the vision embraces as far as the eye can reach a dreary assemblage of naked and barren rocks and arid hills and altogether there are few places in India which to me have appeared more bleak and inhospitable, than the vicinity of Seringapatam in the months of February and March.

Towards the westward, in the course of the Cauvery, the ground rises gradually, so that the fall of the river is considerable and the stream pretty rapid; the country upon the whole in this direction appears evidently raised above the level of Seringapatam, while at the eastern

end of the island, the Korighaut hill stretching down to the bank of the river in the direction of north and south, thus completes a sort of bason having rising grounds on all sides of it, excepting the small space at the corner of the hill above mentioned, and which gives passage to the river as it pursues its course in an easterly direction. The situation therefore of Seringapatam is low in comparison of the surrounding country, a fact indeed which is evident to every stranger on his first view of the place, it being barely distinguishable from the first eminences commanding a prospect of it thro' the thick haze of smoke and fog which generally envelope it.

The island upon which the fort giving name to the whole is situated, is formed of a vast rock of primitive formation washed on each of its sides as mentioned before by the Cauvery, and is but scantily covered with soil on any part of its surface. The highest part of the island, which is also nearly its centre, is that upon which Ganjam is situated and from this with a few irregularities, the surface slopes on all sides towards the river, having at the western extremity, the fort, the lowest part of which where many of the troops and all the officers reside and where the hospital is situated is nearly on a level

with the bed of the river from which it is separated by the fortifications of the place. The soil of the island is red and sandy; in the lower parts of it water is found at a short depth below the surface and this in the fort is somewhat brackish, owing chiefly to the soil here being composed of the remains of old walls &c. impregnated with saltpetre; in the higher portion of the island as at the village of Ganjam, it is necessary to dig thro' a considerable depth of the decaying schistose rock before water is procured, and the natives in general make use of that of the Cauvery, either taken directly from the river, or from canals carried from it which are distributed in various directions over the fort and island.

There is no peculiarity with regard to the houses, either as to their structure, or otherwise, calling for remark; it may be mentioned however that the number of inhabitants in the fort of Seringapatam is very much diminished since the place came into our possession, and the ventilation, dryness, and cleanliness, have in like manner it may be supposed increased; there is little doubt however that its unhealthiness has not diminished in the same proportion, and indeed it is averred that much more sickness has prevailed since that period and more particularly since the year 1805, when upon the breaking out

of a violent fever here, the ventilation was much increased by the formation and widening of new streets &c. than formerly. With regard to these circumstances however, I have good authority for stating that fever has always been prevalent among strangers at Seringapatam, who were however but few under the native governments, and the latter fact is no doubt to be explained by the circumstance, that many places in Mysore, as well as in other feverish countries, have occasional intervals of comparative immunity from the disease, when, all at once it breaks out with great violence, and continues its ravages for several years, shewing in this respect some analogy to the facts regarding the prevalence of the epidemic cholera, so satisfactorily established in the late report emanating from the Medical Board on that subject, and which render every explanation of the cause of the disease extremely difficult, if not impracticable.

The range of the thermometer is by no means great at Seringapatam; in the months of December, January and February it varies in the shade from 56° to 84°; in March, April, and May, which is the hottest period of the year, from 67° to 94°; in June, July, August, and September, from 70° to 86°, and in October, and November, from 68° to 86°; in the sun the heat may be

said to be generally from 30 to 40 degrees higher.

The prevailing winds from the end of April, to October, are from the westward, but during the colder part of the year, they blow, generally with great force and often with a dry disagreeable impression, from the eastward. During the change of the monsoons there are occasional showers, and in the intervals of those which take place in April and May, the sun is extremely powerful; the great mass of the rains however falls from the month of June, to that of September, although it is to be mentioned that in the year 1823 the rains were extremely scanty and much less than the usual average of the monsoon.

After the cessation of the rains and during the cold months of the year, the nights are generally clear, the mornings feel cold and bracing, and the breeze thro' the day has a cool refreshing sensation; occasionally however and particularly about the period of the full moon, slight greyish clouds make their appearance, the temperature of the air rises and the easterly wind which continues to blow throughout the night and is increased in force, becomes of a peculiarly dry and relaxing nature, the pores of the skin are stopt under its influence, and all the premonitory symptoms of fever begin to be felt; in these cir-

cumstances I have observed a considerable increase of sick and I am much inclined to refer the effects which are attributed to the changes of the moon to this change in the state of the atmosphere, the same effect taking place in any state of this luminary and appearing to manifest itself sooner in the natives, than in the European officers of a battalion

I have only further to mention with regard to the country about Seringapatam, that the forest which clothes the western ghauts commences about 35 miles from this place, and perhaps the jungle to the eastward which runs in a stripe from the Baramuhal across the country betwixt Seringapatam and Bangalore may be at much the same distance, while the intervening country is of the bare inhospitable appearance I have before mentioned. My opinion therefore as to the cause of the fever at Seringapatam, which I may mention I only consider as a predisposing one, is shortly as follows, it being granted 1stly, that the disease is common throughout Mysore and more or less so perhaps in proportion to the vicinity of masses of jungle and the height above the place of the surrounding country; 2ndly that no sufficient cause of fever can be discovered in the immediate vicinity of Seringapatam, the same circumstances of paddy fields and the

bed of a river being present in many other situations without producing such effects; and that 3dly, acknowledging no other causes for intermittent fever but marsh or jungly miasmata it is necessary therefore to look at a distance for the presence of either in such perfection as when carried far from their origin may under favourable circumstances produce their specific effects, as are visible at Seringapatam. Such an origin is to be found in the jungles above mentioned, and I conceive that the winds of both monsoons coming across these sources of morbific effluvia, carry a sufficiency of them in their train as to predispose, when concentrated by their specific gravity in low lying vallies, the human body, upon the occurrence of any exciting cause, to take on the symptoms of Seringapatam fever.

This opinion is somewhat corroborated by the most unhealthy periods being those of the greatest prevalence of the wind, particularly when this comes from the eastward, for here are present both the jungly effluvia and a very common exciting cause at the same time; the latter has the effect of stopping the perspiration and giving rise to a degree of common fever and the former disposes it to take on the symptoms peculiar, not alone, to that of Seringapatam, but common to all fevers which have come under my

observation in the vicinity of hilly situations in every part of the country, excepting in those which have occurred in persons not previously the subjects of jungle fever from vicissitudes of temperature, and which alone, I would venture to propose to include under the head of remittens billiosa.

These remarks will in some measure explain the facts which are shown by Table No. 12 in the Appendix. From this it appears that the greatest prevalence of the endemic was in the months of November, December and January, at which period a cold dry easterly wind which had passed over the jungles situated towards the borders of Mysore in that direction and particularly directed towards the Island of Seringapatam by the corner of the Korighaut hill, blew with great force up the valley of the Cauvery carrying I presume a quantity of jungly effluvia along with it; while during the western monsoon, besides the presence of greater moisture of the atmosphere, the wind is in general less powerful, the situation of Seringapatam is not so much exposed to its influence and the greater heat of the season renders stopped perspiration, the precursor of an attack of fever, more difficult of production; in this manner is to be explained I conceive the circumstance of

fever being less prevalent at this period of the year than during the colder months, and with the presence of a cold and dry easterly wind.

I have thus stated my opinion of the cause of fever in Mysore, and the reason of its greater prevalence at Seringapatam, supposing that only marshes or jungles generate the specific cause of intermittent fever; it is possible however, that in tropical countries, hills alone, especially when at the elevation of those in the Mysore country, or when of primitive formation, may communicate some power to the winds which pass over them sufficient to produce fever in favourable circumstances, especially in subjects coming from the hot countries below the ghauts, however my limits will only admit of my suggesting this idea, which perhaps may be considered as not entirely without foundation.

The exciting causes of an attack of the endemic of Seringapatam, either acting on a person not previously the subject of it but exposed to its peculiarly predisposing cause, or on a constitution which has already suffered from the disease, appear to be of two kinds, viz. those which act as stimuli to the system, and those of the depressing kind; the first description includes severe exercise, hard drinking or much eating, exposure to the sun &c.; the excited

state of the heart and arteries produced by which especially if accompanied by a pent up state of the skin often going on to fever, and the second comprises the depressing passions, confinement to the house, the change suddenly from a full to a very low diet, strong purgatives and the like. The stimulus of mercury must be ranked in the former class of causes; I have often had occasion to remark both in the European and native constitution an attack of fever taking place on the mouth getting sore from this medicine taken for rheumatism or the venereal disease, but the necessary confinement and change of diet may also have been concurring causes; perhaps also, the causes producing stoppage of perspiration ought to be included in the same class, as the immediate effect of this taking place appears to be an excited state of the system; this effect is most generally produced by exposure to the night air, the cold breeze of the morning, and particularly the strong eastern winds, especially where the body has been previously heated and perspiring; the unexpected length however, to which this report has drawn out, prevents me from dwelling longer upon this subject, it also permits me saying but a few words on the diagnosis and prognosis of this disease.

The first is easy when all the symptoms of

the disorder are minutely noticed and recorded, and when attention is paid to the exacerbations and remissions, and to the presence of the previous cold fit, which is almost invariably in some degree observable ushering in the former. The prognosis concerns two objects, viz. the result of the present attack and the being free or otherwise from future ones; as regards the former, it may be said to be generally speaking favourable when dysentery, dropsy, affections of the sensorium, paralysis of the lower extremities, or severe vomiting do not accompany it; and with regard to the latter, it is generally known that a person once the subject of this fever seldom escapes future attacks, especially if he remains at Seringapatam, but the short period of my own sojourn there, and the circumstance of the obstacles to forming correct notions among the sepoys as before alluded to, prevent me from giving a positive opinion upon this subject, I may state however that I have had very few or none immediately under my own eye who were once the subjects of fever and who did not suffer from further attacks of the disease, nor have I ever seen any modification of the treatment, of any avail in preventing this result.

With regard to the treatment of the endemic of Seringapatam, I have before stated it to be

different in proportion to the length to which the disease has drawn out, in other words, to vary as this may be called critical or chronic. In the first case when unattended by any other disease, the indications appear to be; in the exacerbations of the fever, to lessen the violence of the symptoms; and the assisting the tendency of each paroxysm and of the disease in general to terminate in a crisis. In respect to the first of these, the symptoms of the natives seldom are so severe as to require very energetic measures to keep them under; in the cold stage nature itself prompts the application of heat in every form which can be procured, as was to be seen among the natives, who upon the supervention of this stage were often to be found shivering and crouching under one or two quilts in the heat of the sun. Along with the use of external heat, warm drinks were often found very efficacious in bringing on the hot fit, and were of use also, in alleviating the thirst and in assisting the vomiting which frequently began in this stage; these diluents however were of the mildest kinds, such as cungee, tea, &c. and frequently with the view of expediting the general progress of the paroxysm an antimonial with opium were administered at the same time.

When the hot stage of the paroxysm was pre-

sent, it was seldom necessary to have recourse to any but the mildest remedies, antimonials were generally given in small doses throughout the paroxysm, and indeed throughout the disease, sometimes the aq. acetit. ammoniæ was substituted and cold acidulated drink, cold air, occasionally spunging with cold water, and sometimes the cold affusion were used to keep the heat of the body within moderate bounds, and when the paroxysm had reached its acmè and these were applied in a vigorous manner, the disease sometimes gave way and a profuse perspiration coming out, a crisis took place; such is the result of my practice with regard to the cold affusion; in critical as well as chronic cases of fever, when used at the acmè of the paroxysm, it quickly brought on a remission of the symptoms and in the former, often a termination to the disease, but when used before the paroxysm has reached its height, the skin becomes only cooled for a time, and soon getting heated again, the affusion of the cold water becomes necessary two or three times before a perspiration is the consequence; notwithstanding of this, in all circumstances of this stage the application of the cold water is very grateful and even in cases where there was little doubt of the presence of organic disease, I have used it with benefit and

have never seen bad effects from it. The proper period for its application however, is in my opinion the very height of the paroxysm and in this case if the water is very cold, one affusion may be sufficient, otherwise when once applied, it must be repeated as often as the skin gets hot, until a remission is procured.

The same effect has been observed in a less degree from the spunging with cold water, and to show that there is little chance of any bad effects taking place from the application of cold water when the body is heated and dry from fever, I may state that I have sometimes when restless and hot with severe headache in the paroxysm of fever, thrown a quantity of cold water over myself when laying in bed and have almost invariably, with the bed and bed clothes thus soaked in water, gone to sleep shortly afterwards and awoke in a profuse and general perspiration ending in a crisis of the disease.

Blood letting I have seldom had recourse to in simple fever, altho' in one or two Europeans, being used at the acmè of the disease a remission of the symptoms supervened immediately, and in these, wherever the heat of skin with dryness and headache with other symptoms indicate a great degree of fever, I am of opinion this remedy ought to be had recourse to without de-

lay; when made use of however in the state of moisture on the skin and a remission of the symptoms, I have sufficient experience to say that it will be followed by an increase of the following exacerbation of fever, and I have little doubt that most of the bad consequences which are said to have resulted from the use of blood letting have been owing to its being employed at this period of the disease.

When the hot stage has passed over and a remission has begun to ensue, it is desirable to have in view our second indication, viz. the assisting the tendency to a crisis. The previous treatment which I have mentioned above will expedite this object, but there are several remedies which used at this period of the paroxysm have also a considerable power in carrying on the remission of the symptoms to a crisis of the disease; this effect is most generally produced by a perspiration, and an emetic therefore exhibited when the paroxysm has passed its acmè and some moisture has begun to come out on the surface, has often increased this to a profuse degree, and a termination to the disease has been the consequence. With this view therefore, as also to empty the stomach of any load of food which may have been taken previous to the supervention of the fever, the exhibi-

tion of an antimonial emetic was invariably my practice with natives on their admission into hospital, and this had often the effect also of opening the bowels, which when such was the tendency sometimes became a profuse watery purging ending in a crisis.

Where the bowels had been costive previously and were not opened by the emetic; where costiveness supervened during the disease; or where headache was a prominent symptom; and in Europeans, every 2d or 3d day with the view of relieving the liver from any tendency to obstruction, a purgative was administered, and the period at which this is exhibited appears to me to be of some consequence. When given so that its operation is going on along with the paroxysm of fever, the irritation of the medicine will do the patient harm, as I have often observed in the increase of feverish fur upon the tongue after its use, and if exhibited so that it begins to operate when the remission or intermission has existed for some time, it weakens the patient and often hastens on the following paroxysm; the proper period in my opinion for the administering a purgative is when a slight perspiration begins to take place on the forehead of the patient, and his stomach becomes somewhat quieted, and so that the operation of

the medicine shall commence shortly after the paroxysm has begun to decline from its acmè, or in cases of tertian, somewhat later.

By this plan, the remission is generally rendered more complete, the following exacerbation is often considerably postponed, and in some instances, I have seen the pulse, during the operation of the purgative continue gradually to lower, a degree of general perspiration has taken place, and a crisis of the disease has ensued. With the above views, I have made use of various purgatives, such as calomel and calocynth, salts and senna, jalap, croton, castor oil &c., each of which has its peculiar advantages in particular circumstances which I need not here detail. The saline purgatives alone I have rarely used, but besides the combination above mentioned I have tried in a few cases the use of them along with antimonials in frequently repeated doses, so as to keep up a constantly purgative effect upon the bowels and with the same intentions I have also used the resinous purgatives with calomel, but this system appeared to do harm from the irritation produced by the operation of these medicines, and I am not acquainted with any advantage whatever secured by this mode of treatment.

The tendency to a crisis also may be some-

times assisted by the use of diluent drinks, the pediluvium, the pulvis antimonialis in a large dose, and other means of this description for producing a profuse perspiration. The use of these means however when injudiciously employed may be attended with bad effects, as when had recourse to before the pores of the skin are fully opened; in this case they may increase the perspiration during the time of their application, but afterwards an increase of heat and dryness of the skin supervene, and less of a remission, and a more severe exacerbation are the consequences; it appears to me that such means ought never to be employed, unless the skin is perfectly cool and moist, the perspiration general, and the application of heat increases the discharge from the skin, without any increase of heat of the body, frequency or hardness of the pulse, or restlessness and febrile oppression.

When by these means the remission of the symptoms has increased to its utmost extent and also when it has extended to an intermission, the tendency to a crisis is further assisted by the means used for the prevention of another paroxysm, and it may be conceived that the cinchona ought to be largely used for this purpose; in critical cases however my experience has pro-

ved satisfactorily to my own mind that this medicine is not necessary, for the disease has always appeared to have the same progress whether the bark was made use of or not, and when it was used in large quantities with the European officers, it did not occasion the disease to stop sooner, nor prevent relapses of it more than when it was only used with the sepoys to the extent of a dram and a half a day, or very frequently not at all; this fact therefore I conceive sufficient to prove that it is not absolutely necessary in this form of the disease, and I have only further to add that when given where there is only a remission of the symptoms, this medicine is extremely apt to irritate the stomach, it being seldom retained upon it in these circumstances.

When a remission or intermission has therefore taken place, I conceive that little can be done by any specific medicine to prevent the following paroxysm, at least, until within an hour or two of its period of accession; previous to this, the same antiphlogistic regimen should be observed as hitherto; the patient should remain quiet, and abstain from every thing which has a tendency to accelerate the frequency of the pulse or to prevent the febrile symptoms from descending to their lowest ebb, and making use of the mildest nourishment.

About the period above specified before the expected period of the accession of fever, and here the circumstance of anticipation or postponement is to be taken into consideration, I have generally been in the habit of exhibiting a dose of the tinct: opii sometimes combined with the æther sulphuric: and have directed the patient to keep himself well covered up, to take a little of some warm diluent occasionally, and in short to endeavour to keep up a degree of moisture on the skin, until the period of fever shall have passed by; in these circumstances, I have often observed the perspiration to become more profuse and no paroxysm of fever has taken place, a crisis of the disease ensuing; sometimes no cold fit is observed; heat of skin frequency of pulse &c. come on, but are not severe and the patient declares he has had no fever; while at other times the fit has been considerably postponed; and in both these cases on the same means being employed at the next expected period, taking the postponement in the latter instance into consideration, no symptom of fever ensues. Occasionally however the cold fit supervenes, any perspiration excited by the means employed previously drying up, and the paroxysm runs through its different stages, in which case, perhaps, from the opium the head

is somewhat confused in the hot fit, but the perspiration which follows is generally more profuse and often terminates in a crisis. I therefore conceive this to be the best practice in these cases, at least it is the one which I have found most generally successful in bringing on the crisis of the disease.

It will be observed that I have said nothing of the use of mercury in this form of the fever, but perhaps this will not surprise as I have laid it down as a frequent exciting cause of the attack; I have often seen the mouth affected in critical case of this disease, and from frequently observing this effect from one or two doses of a purgative with calomel, I am somewhat inclined to think that the constitution is peculiarly easily affected in these instances, I have never, however seen the disease stopt by this, while on the contrary I have no doubt that the stimulus given by it is prejudicial, at least I have always noticed the feverish fur on the tongue, the thirst and heat of the surface increased in these circumstances; in chronic cases however it is otherwise, being then a valuable remedy.

When the return of the paroxysms has become habitual and the disease has drawn out to some length, or in other words after the

fifth or sixth paroxysm, the indications appear to be, besides the moderating the violence of the paroxysms which is effected by the same means in chronic as in critical cases, to break in upon the habit which has been established, and to remove any disease which may keep up the tendency to the habitual return of the paroxysms of fever. With the first view, I have always been in the habit of exhibiting bark, and the result of my experience is shortly this, that under its use, the paroxysms ceased to recur in some instances after a very short use of it, while in others they continued to recur for a considerable time as if the medicine had no effect whatever, and no difference was observable in the constitutions or otherwise of those who were benefited and those who were not by the bark.

Besides this medicine, I have made use of arsenic in the form of arsenite of potass, in many of these cases; my opinion of this coincides with what I have said regarding the vegetable remedy; it must be confessed hovever that it was chiefly given when the former had failed and in very obstinate cases, and other remedies being used at the same time which I conceive more effectual I cannot give my opinion positively as to the use of arsenic in common cases of intermittent.

I can speak more decidedly however on the good effects of making the mouth sore by mercury in these chronic cases of the endemic; latterly when I became convinced of the beneficial result of this method, and when the disease showed a tendency to lengthen out, that is, had extended to 8 or 10 days, and withstood the means I used to break in upon the habit which appeared to be formed, I invariably began the use of this remedy and with the exception of one or two obstinate instances of quartan, I did not witness one case where the disease continued after the mouth had become affected; this result however was not produced by means of the mercury alone, but by it combined with the other remedies for breaking in upon the habit which I had formerly made use of, and which now had that effect which before this, had not resulted from them.

These comprised the means used for keeping up the strength of the circulation and perspiration on the surface, acting also in some measure I presume through the medium of the imagination. With these views I prescribed about an hour or an hour and a half previous to the usual hour of the accession of fever, taking always into consideration the anticipation or postponement which the disease shewed a ten-

dency to, a large dose of opium, or opium and æther, or these within half an hour later, an ounce or so of arrack, or an emetic along with warm drinks, the patient being well covered up, and I have found that the habit has often been broke in upon by these means when the patient was taking bark in the intermissions; otherwise, as I have mentioned, I soon began the use of one grain of calomel three times a day, and the disease almost invariably gave way on the mouth becoming affected. This therefore, as also the use of more stimulating means for preventing the paroxysms and the exhibition of bark, is the difference which I conceive ought to be observed in the treatment of cases of remittent and intermittent which have become chronic.

Besides the general treatment which has been laid down it is necessary to attend to various symptoms which occur; the vomiting is generally removed on the perspiration taking place and of course that which promotes the occurrence of this is the best means for curing the other, otherwise effervescing drinks, opium, blisters to the scrobiculus cordis, opening the bowels well, have been resorted to; chronic dysenteries have been chiefly treated by a combination of ipecacuan, calomel and opium, and more acute cases by blood-letting both general

and topical, along with the above medicines and I have often observed the symptoms checked on their commencement by a full blood-letting; in dropsical symptoms, the *treeak farook* which I have already mentioned to the Board* has been very successful, in some cases however of general and sudden swelling and the patients stout and strong, the cure has been effected by frequent purging; affections of the sensorium, especially when occurring early in the disease, have been treated by blood-letting, blisters, camphor, &c. and in the cases of paralysis, a

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* *Extract from the report referred to.*

"The medicine is generally known among the natives, and goes by "the name of Treeak Farook. It is contained in small leaden cannisters, "and is readily procurable in the bazars. Its composition I have not as "yet been able to determine, although part of its name signifying "Theraica" would lead to the idea of its containing many ingredients.

"It has hitherto been given as used by the natives with the same "regimen as they observe. Future and more extended experience "however, may enable us to simplify its mode of administration and "perhaps to dispense with some of the regimen, which does not appear "to agree with part of the effect and object of the medicine viz.: lower-"ing the pulse.

"The following is the mode of using it which has been mentioned to "me, and which I have followed. Take of Treeak Farook ʒiij, Rhubarb "℥ij & ʒ v, Cinnamon ℈ij, & grs v, and Cloves grs. xxi. These are all "to be well pounded together with a sufficient quantity of honey, and "a bolus of about the size of a nutmeg which weighs about ℈ijss. is "to be placed on the tongue with a small quantity of honey, and taken "every morning.

"The regimen is very peculiar, the patients being restricted to meat "& wheaten bread, as their solid food, and milk & warm water as their "drink.

"The medicine has in most cases but not in all purged the patient "four or five times a day, but I have not been able to detect any other "evident effect from it, than that upon the pulse and the removing any "edema which may have been present. removing

blood-letting in the commencement has often been found very efficacious.

The period of occurrence of the paroxysms in what I have called the irregular remittent of a chronic nature, was so uncertain, that it was impossible to attempt its cure by the mode above mentioned of preventing the paroxysms by keeping up the circulation on the surface, the treatment in these cases therefore was chiefly confined, in the commencement to the moderation of the symptoms of fever, and to assist the tendency to a healthy state of the system, when any partial perspiration on the skin showed a disposition in the disease to terminate in this manner ; in the more advanced period of the case however, the violence of the symptoms was by no means prominent and the system appeared to require the use of medicines adapted to strengthen the body and enable it to recover from that state of weakness of the renovating powers which prevents the body from getting over the tendency to a recurrence of the paroxysms of fever. In such cases therefore, I have seen considerable advantage from the use of bark and wine, or bark and diluted arrack, along with mild nourishment, and in many of these cases I have recommended the sepoy to be allowed to proceed to his native village. A

course of mercury and a system of purging have been tried without success, nor have very large doses of pulv. antimonialis, such as gr: 4 repeated every hour, had any effect in bringing out a perspiration and producing a crisis, nor indeed has any effect whatever been observable from them.

The prevention of relapses is a matter of no small consideration as regards the endemic of Seringapatam; I have had but little experience however connected with this subject; it appears that the exciting causes ought carefully to be avoided, and particularly those occasioning a stoppage of the discharge from the skin, and that therefore it would be desirable to move patients who have had this disease to a warmer climate and particularly to a situation exposed to the air saturated with moisture coming from the sea; it is upon this principle I conceive the advantages depend which result from a sea voyage. The patient should be restricted to mild nourishing diet chiefly composed of farinaceous materials, and this should be particularly observed if any of the premonitory symptoms of an attack begin to make their appearance, at the same time also particular care regarding the avoiding the exciting causes must be attended to, and if there is evidence of an immediate

paroxysm coming on, a dose of the tinct. opii, may frequently prevent it.

With the view of further elucidating the effect of change of climate in preventing attacks of fever, I have taken the liberty of attaching a Table No. 13 furnished to me by the kindness of Mr. Scot, in which is shown the diminution of sick in various corps on their moving from Seringapatam, and the effect of different stations in producing this result.

I regret that the length to which this report has drawn out, and the necessity for its being immediately brought to a close, prevent my noticing several points which have occurred to me regarding this table, I cannot however refrain from remarking to the Board the extraordinary decrease of sick in those corps which moved upon field service, and which if not owing to their most sickly people having been left behind, might perhaps suggest a longer march, for corps which leave this place, than they have usually been subjected to, and I am the more inclined to this opinion from recollecting the circumstance of the 2d Batt. 14th N. I. which some years ago left Jaulnah with about 500 sick in hospital from fever, under my charge; by the time of their arrival at Vellore, nearly the whole of these had perfectly recovered and the corps henceforth continued healthy.

In conclusion to this Report, I have to crave the indulgence of the Board for the many errors which they will find in it, and for the great delay which has occurred in its transmission; repeated attacks of the disease of which it purports to give an account, have been the sole reason of the latter circumstance, and I am willing to entertain a hope that the few original facts which the report contains, and the labour which I have had in drawing it up will induce them to look with the eye of forbearance upon the former.

W. GEDDES,

CUDDAPAH, Assist. Surgeon,

1st *January*, 1825. *Zillah of Cuddapah.*

T. TROTTER,

Actg. Suptg. Surgeon.

APPENDIX

To the Report on the Seringapatam Fever in the 1st Batt. 11th Regt.

TABLE No. I.

Table showing the number of relapses in each Month, their different types, and the caste of the individuals in whom they occurred.

	Rem. Quotidian.	*Rem. Tertian.*	*Rem. Ephemera.*	*Rem. Irregular.*	*Rem. Dup. Tert.*	*Intert. Quotid.*	*Intert. Tertian.*	*Intert. Quartan.*	*Intert. Dup. Tert.*	*Intert. Ephemera*	*Intert. Dup. Quar*	*Hindus.*	*Mussulmans.*	*Hindusthanees.*	*Half casts.*	TOTAL.
May	3	1	0	0	0	0	0	0	0	0	0	2	2	0	0	4
June	7	1	0	0	2	5	0	0	2	1	0	13	1	2	2	18
July	9	2	0	4	1	3	1	0	1	2	0	11	8	3	1	23
August	7	4	5	4	0	4	1	1	1	4	0	17	7	7	0	31
September	17	4	7	3	2	7	3	1	0	3	0	25	11	9	2	47
October	28	6	4	2	3	9	2	3	0	3	0	38	18	4	0	60
November	32	10	8	3	2	25	17	2	4	9	0	62	35	14	1	112
December	39	8	11	1	3	29	19	2	7	14	0	75	45	11	2	133
January	56	6	12	0	4	33	27	9	5	11	0	93	48	20	2	163
February	34	11	9	2	6	16	25	8	7	9	0	73	43	8	3	127
March	14	3	5	1	2	2	6	1	0	3	0	16	17	4	0	37
	246	56	61	20	25	133	101	27	27	59	0	425	235	82	13	755

TABLE No. II.

Table showing the proportion of relapses to primary attacks &c.

	Original cases.	*Of whom had no relapse prior to 10th Mar.*	*Of whom had one relapse in this period.*	*Of whom had 2 relapses in this period.*	*Of whom had 3 relapses in this period.*	*Of whom had 4 relapses in this period.*	*Of whom had 5 & more relapses in this period.*
May............	82	31	24	15	5	4	3
June	73	21	18	15	8	10	1
July............	59	19	12	12	9	6	1
August.........	65	25	13	12	9	5	1
September	102	44	31	16	7	2	2
October	92	46	21	12	4	6	3
November	97	45	32	14	5	1	0
December	68	34	23	6	5	0	0
January	57	39	17	1	0	0	0
February	41	36	5	0	0	0	0
March	12	12	0	0	0	0	0
	748	352	196	103	52	34	11

TABLE No. III.

Table showing the number of days between the last paroxysm of one attack, and the first of the next, for four relapses.

	In 10 days.	*In 20 days.*	*In 30 days.*	*In 40 days.*	*In 50 days.*	*In 60 days.*	*In 70 days.*	*In 80 days.*	*In 90 days.*	*In 100 days.*	*In 10 months.*
1st Relapses	8	69	58	33	30	36	25	15	17	12	88
2nd Relapses....	11	45	40	20	13	11	12	8	8	5	28
3rd Relapses....	4	29	20	18	6	2	6	3	1	0	9
4th Relapses....	4	7	17	8	6	3	3	3	0	0	1
	31	150	135	79	55	52	46	29	26	17	126

TABLE No. IV.

Table showing the number of seizures with fever on each of 29 days of the Moon, during 11 Lunar Months.

On the	15th	day	68	seizures.	On the	28th	day	49	seizures.
......	14th	..	65	......	......	2nd	..	48	......
......	11th	..	59	......	......	6th	..	48	......
......	16th	..	58	......	......	13th	..	48	......
......	20th	..	55	......	......	21st	..	48	......
......	27th	..	54	......	......	9th	..	47	......
......	18th	..	53	......	......	26th	..	46	......
......	1st	..	51	......	......	7th	..	45	......
......	5th	..	51	......	......	3rd	..	43	......
......	10th	..	51	......	......	24th	..	42	......
......	12th	..	51	......	......	4th	..	39	......
......	22nd	..	50	......	......	8th	..	39	......
......	29th	..	50	......	......	23rd	..	36	......
......	17th	..	49	......	......	25th	..	31	......
......	19th	..	49	......					

TABLE No. V.

Table showing the number of days which each individual remained in Hospital for the five first attacks of fever.

	2 days in Hospital.	3 days in Hospital.	4 days in Hospital.	5 days in Hospital.	6 days in Hospital.	7 days in Hospital.	8 days in Hospital.	9 days in Hospital.	10 days in Hospital.	11 days in Hospital.	12 days in Hospital.	13 days in Hospital.	14 days in Hospital.	15 days in Hospital.	16 days in Hospital.	17 days in Hospital.	18 days in Hospital.	19 days in Hospital.	20 to 30 days in Hospital.	A Month and upwards.
Primary Attacks	2	46	75	46	81	96	88	49	50	43	36	19	11	12	14	12	8	6	28	25
1st Relapses	0	17	30	22	49	66	55	36	17	16	6	9	8	3	4	6	6	3	13	14
2nd Relapses................	0	7	22	15	26	29	19	10	12	10	6	8	5	1	4	1	2	1	8	11
3rd Relapses................	0	3	12	4	10	17	9	10	5	4	4	3	5	1	2	2	0	0	2	1
4th Relapses................	0	3	3	4	1	9	6	4	2	2	2	0	0	0	0	1	1	0	1	5
	2	76	142	91	167	217	177	109	86	75	54	39	29	17	24	22	17	10	52	56

TABLE No. VI,

Table showing the prevalence &c. of Ephemeral Remittent and Intermittent Cases.

	Ephemeral Primary Attacks.										Ephemeral Relapses.										Total.				
	Hindus.		Mussulmans.		Hindusthanees		Half Casts.		Total.		Hindus.		Mussulmans.		Hindusthanees		Half Casts.		Total.						
	Remit.	*Intermit.*	*Remit.*	*Intermit.*	*Remit.*	*Intermit.*	*Remit.*	*Intermit.*	*Remit.*	*Intermit.*	*Remit.*	*Intermit,*	*Remit.*	*Intermit,*	*Remit.*	*Intermit.*	*Remit.*	*Intermit.*	*Remit.*	*Intermit.*	*Hindus*	*Mussulmans.*	*Hindusthanees*	*Half casts.*	*Total.*
May	1	0	2	0	1	2	0	0	4	2	0	0	0	0	0	0	0	0	0	0	1	2	3	0	6
June......	2	2	1	0	1	2	0	0	4	4	0	0	0	0	0	1	0	0	0	1	4	1	4	0	9
July	4	2	0	3	1	1	0	0	5	6	0	1	0	0	0	0	0	1	0	2	7	3	2	1	13
August	4	4	4	3	1	1	0	0	9	8	2	1	2	2	1	1	0	0	5	4	11	11	4	0	26
September .	9	5	4	4	1	0	1	0	15	9	4	0	2	1	0	2	1	0	7	3	18	11	3	2	34
October ...	2	2	5	3	1	0	0	0	8	5	0	2	4	1	0	0	0	0	4	3	6	13	1	0	20
November .	4	5	3	3	0	1	0	0	7	9	8	6	0	3	0	0	0	0	8	9	23	9	1	0	33
December .	5	3	1	3	0	2	0	0	6	8	6	9	5	4	0	1	0	0	11	14	23	13	3	0	39
January ...	4	5	0	1	1	0	0	0	5	6	7	5	3	3	1	3	1	0	12	11	21	7	5	1	34
February ..	3	6	1	1	0	0	0	0	4	7	4	7	3	1	2	1	0	0	9	9	20	6	3	0	29
March	0	1	0	0	0	0	0	0	0	1	3	0	1	0	1	0	0	0	5	0	4	1	1	0	6
	38	35	21	21	7	9	1	0	67	65	34	31	20	15	5	9	2	1	61	56	138	77	30	4	249

TABLE No. VII.

Table showing the prevalence &c. of Quotidian Remittent and Intermittent Cases.

	Quotidian Primary Attacks.										Quotidian Relapses.										TOTAL.				
	Hindus.		Mussulmans.		Hindusthanees		Half Casts.		Total.		Hindus.		Mussulmans.		Hindusthanees		Half Casts.		Total.						
	Remit.	Intermit.	Remit.	Intermit.	Remit.	Intermit.	Remit.	Intermit.	Remit.	Intermit.	Remit.	Intermit.	Remit.	Intermit.	Remit.	Intermit.	Remit.	Intermit.	Remit.	Intermit.	Hindus	Mussulmans.	Hindusthanees	Half casts.	Total.
May......	16	5	15	3	1	0	0	0	32	8	1	0	2	0	0	0	0	0	3	0	22	20	1	0	43
June......	17	6	11	4	0	0	0	0	28	10	5	5	1	0	1	0	0	0	7	5	33	16	1	0	50
July	7	2	3	3	2	0	0	0	12	5	5	2	3	1	1	0	0	0	9	3	16	10	3	0	29
August . ..	11	4	9	3	2	0	0	0	22	7	5	2	0	2	2	0	0	0	7	4	22	14	4	0	40
September.	14	4	14	9	0	0	0	0	28	13	9	6	2	0	5	1	1	0	17	7	33	25	6	1	65
October ...	9	10	15	11	2	0	0	0	26	21	18	8	10	0	0	1	0	0	28	9	45	36	3	0	84
November.	21	13	10	11	2	1	0	0	33	25	11	15	16	7	5	3	0	0	31	25	60	44	11	0	115
December..	8	10	6	7	1	2	0	0	15	19	21	19	13	8	3	2	2	0	39	29	58	31	8	2	102
January ...	7	3	4	4	0	0	0	0	11	7	33	20	17	11	5	2	1	0	56	33	63	36	7	1	107
February..	8	1	5	2	0	0	0	0	13	3	15	14	16	2	1	0	2	1	34	17	38	25	1	2	66
March	2	1	1	1	0	0	0	0	3	2	5	1	7	1	2	0	0	0	14	2	9	10	2	0	21
	120	59	93	58	10	3	0	0	223	120	128	92	87	32	25	9	6	1	246	134	399	270	47	6	722

TABLE No. VIII.

Table showing the prevalence &c. of Tertian Remittent and Intermittent Cases.

	Tertian Primary Attacks.										Tertian Relapses.										Total.				
	Hindus.		Mussulmans.		Hindusthanees		Half Casts.		Total.		Hindus.		Mussulmans.		Hindusthanees		Half Casts.		Total.						
	Remit.	*Intermit.*	*Remit.*	*Intermit.*	*Remit.*	*Intermit.*	*Remit.*	*Intermit.*	*Remit.*	*Intermit.*	*Remit.*	*Intermit.*	*Remit.*	*Intermit.*	*Remit.*	*Intermit.*	*Remit.*	*Intermit.*	*Remit.*	*Intermit.*	*Hindus*	*Mussulmans.*	*Hindusthanees*	*Half casts.*	*Total.*
May......	4	5	1	3	2	2	0	1	7	11	1	0	0	0	0	0	0	0	1	0	10	4	4	1	19
June......	3	7	2	3	0	1	1	0	6	11	1	0	0	0	0	0	0	0	1	0	11	5	1	1	18
July......	1	8	2	3	0	1	1	0	4	12	1	0	0	1	1	0	0	0	2	1	10	6	2	1	19
August....	2	3	5	0	1	0	0	0	8	3	3	1	0	0	1	0	0	0	4	1	9	5	2	0	16
September.	7	4	3	3	1	0	0	0	11	7	2	1	2	2	0	0	0	0	4	3	14	10	1	0	25
October...	4	3	2	5	0	0	0	0	6	8	2	2	2	0	2	0	0	0	6	2	11	9	2	0	22
November.	2	4	3	5	1	1	0	0	6	10	5	11	2	3	2	3	1	0	10	17	22	13	7	1	43
December.	1	7	3	2	0	0	0	0	4	9	3	10	3	7	2	2	0	0	8	19	21	15	4	0	40
January...	1	6	2	6	1	1	0	0	4	13	3	18	3	4	0	5	0	0	6	27	28	15	7	0	50
February..	3	3	1	1	1	0	0	0	5	4	4	12	7	9	0	3	0	1	11	25	22	18	4	1	45
March....	0	1	0	1	0	0	0	0	0	2	2	2	1	3	0	1	0	0	3	6	5	5	1	0	11
	28	51	24	32	7	6	2	1	61	90	27	57	20	29	8	14	1	1	56	101	163	105	35	5	308

CASE No. 9.

Case of Critical Tertian Remittent in Ensign Bridge, 1st Batt. 11th Regt. Ætat. 22, one year in India.

July 8th, 1823.—10 a. m. Says that yesterday he had no appetite, and that during the night he did not sleep from restlessness and had frequent heats and chills; took 2 grs. of calomel last night and some salts this morning which have operated twice; pulse at present 120, skin warm, tongue a little foul and rather dry, face rather flushed as also the eyes. Ordered a pill of calomel grs. j. extract colocynth g. ij. tart: antimon: gr. $\frac{1}{4}$, every third hour. 3 p. m. Has continued much in the same way, no operation from the pills; pulse 112 skin warm, but if any thing a little moist, tongue as before. 6½ p. m. has been dozing a good deal, says he feels better, skin moist, pulse 108, tongue foul, has had one stool from the pills, which were ordered to be continued.

9th.—6 a. m. Was purged twice very copiously during the night, and feels better to day; pulse 96, skin moderate, tongue rather feverishly foul, very little headache; ordered the pills to be continued from 9 a. m. as before. 11¼ a. m. continues better, has taken one pill, pulse 84, skin cool and moist, tongue a little foul; ordered ʒ ss. of bark every hour. 6½ p. m. has continued pretty well thro' the day; pulse 80, skin pretty natural, tongue rather foul, no further evacuation; ordered half a dram of jalap to-morrow morning.

10th.—Slept very well, but awoke with headache and feelings of fever; took the jalap then and was purged 5 times and the purging still continues at 11½ a. m. pulse 112, skin warm, a little moist, tongue white and rather dry, face a little swelled and eyes somewhat suffused; ordered the aq. acetit. ammoniæ ℥ ij. to ℥ xii. of water and a wine glass full every hour. 2 p. m. there is now a degree of moisture on his skin p. 108. otherwise much as before; the medicine continued. 5 p. m. has been dozing a little, and his skin is more moist. Pulse 96, ordered ʒ ss. of bark from 7 p. m. to be taken every hour.

11th.—Slept very well and feels better this morning pulse 84, skin pretty natural, tongue a little foul; ordered a continuance of the bark. 11 a. m. continues pretty well, pulse 84 sitting up continues his bark 6 p. m. Has continued pretty well thro' the day, sitting up and took a little beef tea in the forenoon, his pulse however is as before, skin cool; ordered the bark to be continued.

12th.—Slept very well, pulse 68, skin natural tongue a little foul, feels very well; ordered a continuance of the bark. 10½ a. m. continues without complaint, 6 p. m. continues very well appetite good. 13th convalescent, 15th quite well.

N. B.—I may remark that the treatment here is not what I was latterly led to consider as the best; experience afterwards showed me that bark was by no means necessary in those cases.

TABLE No. X.

Table showing the prevalenee &c. of Double Tertian Remittent and Intermittent Cases.

	Double Tertian Primary Attacks.										Double Tertian Relapses.										TOTAL.				
	Hindus.		Mussulmans.		Hindusthanees		Half Casts.		Total.		Hindus.		Mussulmans.		Hindusthanees		Half Casts.		Total.						
	Remit.	*Intermit.*	*Remit.*	*Intermit.*	*Remit.*	*Intermit.*	*Remit.*	*Intermit.*	*Remit.*	*Intermit.*	*Remit.*	*Intermit.*	*Remit.*	*Intermit.*	*Remit.*	*Intermit.*	*Remit.*	*Intermit.*	*Remit.*	*Intermit.*	*Hindus*	*Mussulmans.*	*Hindusthanees*	*Half casts.*	*Total.*
May	3	2	0	1	1	0	0	0	4	3	0	0	0	0	0	0	0	0	0	0	5	1	1	0	7
June	2	1	0	1	0	0	0	0	2	2	1	1	0	0	0	0	1	1	2	2	5	1	0	2	8
July	3	1	0	4	2	0	0	0	5	5	0	1	1	0	0	0	0	0	1	1	5	5	2	0	12
August	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	2	0	0	0	2
September.	3	2	2	0	1	0	0	0	6	2	1	0	1	0	0	0	0	0	0	2	6	3	1	0	10
October ...	0	2	3	3	0	0	0	0	3	5	3	0	0	0	0	0	0	0	0	3	5	6	0	0	11
November.	1	0	0	0	1	0	0	0	2	0	0	3	1	1	1	0	0	0	4	2	4	2	2	0	8
December.	2	1	1	1	0	0	0	0	3	2	2	4	1	3	0	0	0	0	7	3	9	6	0	0	15
January ...	1	2	1	1	0	0	0	0	2	3	3	0	0	4	1	1	0	0	[illegible]	4	6	6	2	0	14
February..	2	2	0	0	0	0	0	0	2	2	3	6	3	1	0	0	0	0	7	6	13	4	0	0	17
March	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	0	4	0	0	4
	1	14	7	11	5	0	0	0	29	25	13	16	11	9	2	1	1	1	27	27	60	38	8	2	108

CASE No. 11.

Case of Critical double Tertian Intermittent in Chingulroydoo Sepoy 1st. Battn. 11th. Regt. Ætat. 22. entered 23d. May 1823.

24th May.—Came into Hospital yesterday morning and complained of giddiness, along with costiveness; since then he says he had fever on the night of the 22nd at midnight, and that this left him at 5 a. m. yesterday; took ʒss, of jalap on admission and had 6 stools. Had a return of fever at 8 a. m. yesterday which continued thro' the day, took tinct. opii. gs. xxx and pulv. antimonial grs. viii on the fever supervening, and the latter was repeated twice in the course of the day. To day, 7 a. m. pulse 64, skin natural, tongue pretty clean, ordered ʒss. of pulv. cinch. 3tia. quaq. hora. 25th 7 a. m. Fever at 4 p. m. yesterday, pulse 92, skin moderate, tongue a little foul; bowels open, took 1 grain of tart. antimon: last night, after which he had some vomiting, ordered tart. antimon. gr. $\frac{1}{4}$ tert. quaque hor:

26th—7 a. m. Continued with a considerable degree of fever thro' yesterday, an exacerbation coming on at 9 a. m. and was somewhat delirious, passing his stools in bed, had also a good deal of vomiting, pulse to day 66, skin cool, tongue rather foul, bowels purged thro' yesterday. pulv. cinchon ʒss. 2da. qq. h. ordered.

27th—7 a. m. Fever at 4 p. m. yesterday and took on its accession tart. antimon. grs. i. and

tinct. opii. gtt. xxx. pulse now 76, skin moderate, tongue slightly foul, bowels open. Continued tart. antimon. u. a.

28th—Slight heat of skin thro' yesterday, pulse 60, skin cool, tongue slightly foul, bowels regular, ordered pulv: cinchon ℥ss. tert. qq. hor.

29th—No fever, pulse 64, skin natural, tongue clean, bowels regular. Bark continued.

30th—No fever, and wishes to go to his duty. Discharged.

TABLE No. XII.

Table showing the general prevalence &c. of the Endemic in each month of the period included in this Report.

	Remittent Quotidian.	*Remittent Tertian.*	*Remittent Ephemeral*	*Rimittent Irregular.*	*Remittent Dup. Tertian.*	*Intermittent Quotidian.*	*Intermittent Tertian.*	*Intermittent Quartan.*	*Intermittent Dup. Tertian.*	*Intermittent Ephemeral.*	*Intermittent Dup. Quartan*	TOTAL.	*Of which were in Hindus.*	*Of which in Mussulmans.*	*Of which in Hindusthanees.*	*Of which in Half Casts.*
May,	35	8	4	10	4	8	11	0	3	2	1	80	43	30	12	1
June,	35	7	4	8	4	15	11	0	4	5	1	94	58	25	8	3
July,	21	6	5	6	6	8	13	0	6	8	1	82	39	30	11	2
August,	29	12	14	9	0	11	4	3	2	12	0	96	50	32	14	0
September,	45	15	22	12	8	20	10	2	2	12	1	149	80	53	13	3
October,	54	12	12	11	6	30	10	3	5	8	1	152	74	71	7	0
November,	65	16	15	5	4	50	27	3	4	18	2	209	113	74	21	1
December,	54	12	17	1	6	48	28	4	9	22	0	201	112	70	17	2
January,	67	10	17	4	6	40	40	11	8	17	0	220	122	72	24	2
February,	47	16	13	3	8	19	29	8	9	16	0	168	102	54	9	3
March,	17	3	5	1	4	4	8	2	0	1	1	46	20	21	5	0
	469	117	128	72	56	253	191	36	52	121	8	1503	813	532	141	17

TABLE No. XIII.—*Exhibiting the average monthly number of admissions into Hospital of native corps, first, prior to their entering Seringapatam; secondly, during their stay in that Garrison; and thirdly, after their departure from it.*

CORPS.	Date of arrival of the Corps at Seringapatam.	State of Health of the Corps before entering Seringapatam.							State of Health of the Corps during its stay at Seringapatam.							State of Health of the Corps after its departure from Seringapatam.						
		From what station the Corps marched to Seringapatam.	Number of months noticed in this Table.	Number of deaths during that period.	Av. mon. sick at the former station.				Date of departure from Seringapatam.	Number of months noticed in this Table.	Number of deaths during that period.	Average monthly sick at Seringapatam				To what station the Corps marched on leaving Seringapatam.	Number of months noticed in this Table.	Number of deaths during that period.	Average monthly sick at the station.			
					Fevers.	Bowel Compl.	Other diseases	Total.				Fevers.	Bowel Compl.	Other diseases	Total.				Fevers.	Bowel Compl.	Other diseases	Total.
2nd Batt. 7th Reg. N. I.	May 1799	Unknown	3	0	6	1	16	23	January 1800	2	0	11	3	73	87	Field Service..	6	0	3	0	21	24
1st 2nd	December 1799	Chittledroog ..	0	0	0	0	0	0	15th do. 1803..	10	16	51	9	133	193	Field Service..	4	3	21	6	56	83
2nd 4th	April 1801....	Nundidroog ..	0	0	0	0	0	0	23rd do. 1802..	6	22	178	15	105	298	Gurramcondah	5	2	65	12	90	167
1st 8th	Do. 1802....	Wynaad & Coliat	6	13	65	14	111	190	15th do. 1803..	8	9	60	8	106	174	Field Service..	6	11	31	3	32	76
2nd 3rd	May 1802	Chittledroog ..	6	5	70	8	189	267	15th do. 1803..	7	9	48	12	100	160	Field Service..	6	2	14	8	34	56
2nd 18th	November 1802	Nundidroog ..	3	3	8	4	112	124	15th do. 1803..	1	2	6	0	82	88	Field Service..	4	2	10	6	50	66
1st 14th	December 1802	Tritchinopoly..	0	0	0	0	0	0	6th Sept 1804 .	8	12	55	2	50	107	Mangalore	6	6	29	5	53	87
1st 4th	September 1804	Vellore	1	4	12	26	44	82	28th Aug. 1805.	11	38	31	3	32	66	Wynaad	4	45	188	41	120	349
2nd 12th	July 1805	Hulliall	6	20	31	7	15	53	3rd Jan. 1809..	11	43	30	5	50	85	Cannanore	6	6	18	10	123	151
1st 12th	April 1806....	Calicut	1	0	10	3	70	83	31st Oct. 1806..	6	17	68	14	87	169	Secunderabad ..	4	17	53	8	66	127
1st 2nd	June 1806	Poonah	3	3	32	14	64	110	15th Aug. 1807.	9	18	105	12	67	184	Travancore....	6	5	30	13	134	177
1st 4th	April 1806....	Wynaad	6	53	149	33	110	292	4th Aug. 1806..	1	6	126	80	329	535	Tritchinopoly..	1	2	50	32	146	228
2nd 16th	May 1806.....	Tritchinopoly..	6	3	16	5	66	87	25th Mar. 1808	12	103	226	27	93	346	Dindigul......	1	2	189	11	61	261
2nd 2nd	June 1806	Secunderabad..	6	6	38	2	58	98	17th Nov. 1806.	4	8	57	8	59	124	Bangalore.....	6	11	24	3	107	134
2nd 19th	December 1807	Tritchinopoly..	3	5	5	5	8	18	October 1809..	11	38	99	17	36	152	Tritchinopoly..	6	4	44	10	44	98
2nd 3rd	November 1809	Bangalore	1	2	19	32	104	155	4th Mar. 1810..	2	1	62	9	62	133	Cannanore.....	6	9	19	9	81	109
2nd 6th	February 1810	Bangalore	5	0	24	15	108	147	7th Jan. 1812..	9	55	136	27	39	202	Chittledroog ..	6	22	75	10	41	126
1st 13th	April 1810....	Travancore....	1	2	16	24	89	129	2nd Sept. 1812	11	25	85	5	31	121	Field Service..	2	2	29	4	16	49
2nd 18th	September 1812	Kotercherry ..	6	7	13	3	51	67	14th Mar. 1814	12	56	126	6	35	167	Tritchinopoly..	6	9	56	6	31	93
2nd 10th	November 1812	Cabo	6	2	18	2	29	49	18th April 1815	12	52	73	7	20	100	Bangalore.....	6	21	65	3	35	103
2nd 22nd	November 1812	Cannanore	6	2	8	3	30	41	12th June 1813	5	34	214	13	94	321	Tritchinopoly..	6	18	192	24	77	293
2nd 7th	March 1814....	Wallajahbad ..	2	0	3	1	14	18	20th Dec. 1815	12	30	219	8	34	261	Palamcottah...	6	10	85	8	54	147
1st 8th	May 1815	Bangalore	4	4	9	2	86	97	29th Mar 1816	10	56	196	6	49	251	Bangalore.....	6	9	96	1	58	155
2nd 12th	December 1815	Bangalore	6	3	12	2	44	58	28th April 1816	5	6	139	4	127	270	Bangalore.....	6	15	159	10	61	230
1st 17th	April 1816	Palamcottah ..	6	7	7	1	33	41	16th Dec. 1816	9	12	71	5	45	121	Cannanore.....	6	4	9	2	33	44
1st 19th	May 1816	Nundidroog ..	6	4	4	1	43	48	11th Nov. 1816	6	12	111	5	60	176	Cannanore	6	5	29	1	28	58
2nd 23rd	December 1816	Cannanore	6	10	10	4	43	57	9th Nov. 1817..	10	11	23	2	25	50	Bangalore	6	5	14	1	22	37
2nd 11th	February 1817 .	Cannanore	5	1	7	1	14	22	17th Dec. 1819.	12	39	94	5	29	128	Vellore	4	8	62	4	67	133
1st 18th	December 1819	Madras	6	40	22	22	42	86	17th April 1823	12	45	166	8	57	231	Tritchinopoly..	6	16	2[illegible]	6	19	4[illegible]
1st 11th	April 1823	Ellore	[illegible]	12	22	2	45	69	Now there....	10	[illegible]7	160	16	41	211							

ADDITIONAL APPENDIX.

ADDITIONAL APPENDIX,

To the Report

ON THE SERINGAPATAM FEVER.

By Assist. Surg. W. Geddes.

Since the date of the *Report*, ample opportunities have been afforded me of comparing its details with the appearances presented in the remittent and intermittent fevers of my present station. In the period of two years and a half, no fewer than 1910 cases of these diseases have passed under my observation in hospital, the greater number of which have been daily recorded, and many instances of fever have been also seen by me among out patients, comprising all descriptions of individuals. The result of this experience has been to convince me of the great similitude of all the types of the remittents and intermittents which usually fall to our lot to treat in this country, and I have had reason to be confirmed in the general truth of the statements which I have advanced from what I witnessed at Seringapatam.

A few instances however have occurred in the course of my practice of symptoms which I had not an opportunity of noticing at that station, and some modification of the progress of peculiar cases has attracted my attention; a valuable remedy likewise in these diseases has been acquired since the date of that report and I have had an opportunity of revising and correcting some of the opinions given in that paper; I therefore gladly avail myself of the permission of the Medical Board to make a few observations upon these subjects. The descriptions of persons who have chiefly fallen under my notice have been prisoners in the jail and sepoys. My observations however upon the former class of persons have in general been extremely unsatisfactory; they are so much under the influence of the depressing passions, so impressed with dread of every thing around them and their habits of life are usually so different from what they have been accustomed to, that I have felt it impossible to form any general deductions from the appearances which their fevers have manifested; the chief features of them however being; chronic irregular attacks of fever; and a tendency to terminate in a state of looseness of the bowels, often going on to a species of chronic dysentery, which generally

terminates in edematous swellings, often proving fatal.

The following observations therefore have chiefly been derived from attention to the phenomena which have exhibited themselves among the sepoys in the 1st. Extra Regt. confirmed by numerous cases among the natives generally, and I have only availed myself of my practice in the jail when this has agreed with what I have noticed elsewhere.

The fever which has prevailed here during the last 8 months first began to manifest itself in the month of July. The previous cold weather had been attended by rather a larger proportion of this disease than is usual, but it had gradually diminished as the hot weather commenced, and in the months of May and June it had entirely disappeared; the former having fewer cases of fever than any period within my observation at this station. In the month of July, however, a considerable number of cases began to make their appearance; in the month of August being somewhat fewer; toward the end of September, however, they were again numerous and gradually increasing thro' the whole of October, they have continued since that period in a proportion fully equal to that at Seringapatam, getting fewer however towards the end of February.

Under such an unusual prevalence therefore of this disorder, it may not be entirely useless, as a matter of record, to give a short account of the peculiarities of the seasons during the above period, referring for more particular details to the register No. 1. at the end of this paper, in which will be seen a daily state of the weather from the 1st. day of May to the last of the following December.

It is to be premised however, that since the year 1822, the same irregularities have occurred, with regard particularly to the supply of rain, at Cuddapah, as appears to have been very general over the whole of this presidency. The year 1823 is generally known in this respect, and the effects of the famine in consequence were in no place more severely felt than at this station. In 1824, no rain of any consequence fell during the whole of the western monsoon, and it was not until the month of October that a sufficient quantity took place to enable the cultivators to go on with their wet cultivation and the crops were accordingly both sown and reaped at a later period than in usual seasons. The supply of rain also throughout 1825, altho' sufficient, but barely so, to secure the same object was at no time particularly heavy and it took place at long intervals with intermediate periods of considerable

drought, so that the ground was kept at no time particularly moist for any length of time and the paddy fields were not so generally cultivated as in more favourable seasons.

The last season however, has been remarkable for the quantity of rain which has fallen and the cultivation in consequence having been carried to its greatest extent.

The month of May of this year, was somewhat cooler than usual from the westwardly wind setting in strongly at an early period and occasional thunder storms having taken place in various parts of the district, the hot weather finally terminating in heavy rains in the end of the month.

June was composed alternately of sultry weather with a clear blue sky, having thunder and lightning and heavy rain generally in the night, or there has been more usually a steady breeze from the west with clouds passing over, sometimes, especially in the afternoon letting fall rain and with either a hazy or a clear sky, the clouds upon it being darker or whiter in proportion to these circumstances; while July was almost entirely composed of this latter description, being such as would be characterised in another climate by the epithet of bleak and raw weather; the wind which came with a consider-

able force during the day, also generally continuing throughout the earlier part of the night.

August was more of a sultry description and in this month, the greatest fall of rain took place of any part of the western monsoon; the sky in the day time was of a clear dark blue with a few white clouds forming on it, occasionally letting fall some rain, without any steady wind, the nights being usually in the earlier part of them, calm and serene, while afterwards they became overclouded and heavy rains took place, usually with thunder and lightning. The first half of the month of September was composed of a mixture of both the above descriptions of weather, a considerable quantity of rain taking place, but after the 15th with little exception, there was no rain; the sky was of an azure hue, with a few clouds forming on it in the day, disappearing at night, and a slight wind from the west followed the same process, while during the night there was a considerable fall of dew, and the appearances altogether were very much those of the rains having suddenly been brought to a termination.

This state of the weather also continued in a considerable degree throughout October, with the exception that in this month, the easterly wind began to blow, at first commencing from

the S. East in the evening and it finally settled in this quarter after the 16th of the month, the change being accompanied with a considerable fall of rain and gusts of wind from the west. Throughout the month also there were occasionally, alternate states of rain, sometimes with thunder, and clear skies with dews at night, the range of the Thermometer in the whole month being considerable in the 24 hours.

The month of November was the chief period of the N. East monsoon and the rain which came across the hills from the Carnatic, and was let down from immense masses of clouds generally making their appearance on the horizon from 12 to 2 p. m. or by a gradual thickening of cloud from the same quarter, was alternated with clear skies, dewy nights and cold weather, the Thermometer immediately getting up a few degrees upon the approach of a rainy constitution in the atmosphere. The greater part of the rain took place in the first half of the month continuing nearly for days together and the latter half was more clear, with a steady breeze from the east during the day and clear nights with considerable dew.

The same description of weather also continued throughout December, with occasionally for a day or two, a rainy state coming over the

sky from the Carnatic with the usual increase of temperature in the atmosphere. The month of January also has had a very unusual appearance of this description, a considerable quantity of rain falling from the 11th to the 17th, but otherwise, excepting the month of February being cooler to a later period than usual, there has been nothing different from the general state of the weather at this season, the nights being clear and calm with dew, and a considerable breeze blowing from the N. East, commencing at some period of the forenoon and continuing on till evening.

The general progress of vegetation and cultivation, also, in this year has been as follows. The dry and parched up appearance of the ground during the preceding hot months began to change into a shade of green about the 5th of June and immediately the ryots put their ploughs into the soil for the sowing of their dry grains; these were generally laid down in the course of this month and by the end of it, the fields of Juwarie and other grains had generally reached to the height of 5 or 6 inches. The preparation of the paddy fields and the sowing of this grain also were completed thro' the month of August, at which time, the tanks had filled to a degree to induce the cultivators to extend their cultivation

to its utmost extent and the fields were kept in a constantly overflowed state from this period until the beginning of February when they were generally reaped.

It is also to be remarked that the constant succession of heavy rains thro' the whole of this period, keeping the ground in a continued degree of moisture, had the effect of retaining a perpetual state of verdure on till nearly the present season and the contrast of the last year has been in no circumstance greater to the preceding than in this respect, the grass having been taken notice of in that year to have been 5 times green and an equal number of times parched in the course of the 4 months of the western monsoon.

Having thus stated the circumstances which may be supposed to have most influenced the constitution of the present season in exciting fevers, I beg to refer to the abstract No. 2. for a daily detail of the admissions into hospital among the sepoys with this disease from the beginning of June to the present date; I have mentioned there, the particular circumstances to be taken into consideration in drawing inferences from that document, and these being allowed their due weight, the abstract may be considered as giving a sufficiently correct idea of the prevalence of the fever in the period men-

tioned. I have also attached a column showing the periods of full and new moon, by which those who are inclined to favour the idea of the influence of this luminary in exciting fever can at once see to what extent it has operated in the present instance.

It is with diffidence however, that, with all the attention I have necessarily given to this subject, I hazard an opinion upon the cause of such unusual prevalence of fevers in the present season. The cause of remittents and intermittents in all years is perhaps a more difficult matter to determine than has usually been imagined, for it appears impossible to refer every case of these diseases which occur in our practice to the agency of either of the causes which are at present acknowledged as the only legitimate ones, viz. jungly effluvia or marsh miasmata. The subject must ultimately be determined like every other question of cause and effect, by the result of observations, continued in the present instance thro' a series of years and it is with the view of contributing a small portion of information towards this object, that I have ventured to detail so fully and perhaps so tediously, the circumstances of the present season.

In the mean time however, I may give it as

my opinion, that it will be one step towards the decision of this question, if we study more the effects of vicissitudes of temperature, or of a great range of temperature in 24 hours, and a succession of such changes, upon the human frame, as it is modified in this country and particularly as it is modified by a succession of peculiar seasons.

Such vicissitudes are much more prominent in low lying situations than in places on a level with the surrounding plain, as must have been observed by many persons who have travelled much in this country, and have had opportunities of noticing the cold damp atmosphere they have suddenly descended into, in the morning, upon crossing in their march places of this discription, while at the same time, the heat of the sun is equally powerful, during the day here, as in other situations, and such places accordingly afford a greater range of the thermometer in 24 hours than in open plains. Such are the places also, which have suffered most from fever during the present season at this station and notwithstanding that the disease has considerably declined in other situations it still continues to prevail in low damp places such as are above mentioned.

The spot which has suffered most and in

which it has proved fatal to a considerable number of people is old Cuddapah, at the distance of a mile and a half from the town of Cuddapah, the interval being filled up by a large tank, immediately below the bund of which, the village is situated; the water of this tank has for the last 7 months been fully on a level with, if not above, that of the houses of the place. On each of the three other sides of the village there are extensive paddy fields and the place is so extraordinarily damp in consequence, that water in the wells is almost on a level with the earth and I understand, that the cultivators find it impossible to keep grain in their houses for any length of time without its getting musty.

The part of the town of Cuddapah also which has suffered chiefly is much in the same circumstances; it is lowly situated running along the bank of a deep nullah which has been entirely full of water during the period in which the above tank has been in the same circumstances, it being indeed a continuation of the same, and the houses here are much crowded on each other; there are also many trees, chiefly tamarind, which keep off the sun from the earth and this is accordingly, scarcely at the present period, dry from the rains of the last monsoon, while in all such places the dew is more considerable at night than in more elevated situations.

Without any direct thermometrical observations therefore to prove the fact, I think I am warranted in inferring that there is a greater range of temperature in these situations than in other drier places and it is, also, perhaps not too much to suppose, that the saturated state in which the whole country, has been with moisture during the present year gives a greater range generally than in usual seasons. Perhaps also, the previous three years of comparative drought may have rendered the bodies of the inhabitants more liable to suffer from a greater range of temperature than if the seasons had followed their usual progress, and accordingly, if these suppositions are allowed, it follows, that the unusual prevalence of fever here in the present season and its greater severity in particular situations may be attributable, in the first place, to the whole of the country being placed in much the same circumstances as low lying situations, and secondly, that this prevalence will be further increased in places which are lower and damper than the general surface of the country, while the previous modified constitutions of the inhabitants by three unusual seasons of drought have rendered them more liable to be affected by the great range of temperature in consequence.

It is in favour of these ideas, that the more

dry and elevated situations have already, by the influence of the sun, become comparatively free from these diseases, while they still continue to prevail obstinately in places which are otherwise situated.

If these views, therefore, are correct, and it appears to me that they may ultimately be proved or disproved by thermometical observations, made in the open air, it is obvious that the same reasoning can also be extended to the circumstances of jungly situations and of Seringapatam.

It is also no small argument in favour of these opinions; that we can decide upon what are the best means for avoiding an attack of fever, and this upon the principle laid down in the report on the Seringapatam fever, when I had no bias in favour of any particular doctrine upon this subject. It is there stated that it appeared to me every relapse of fever was preceded by a pent up state of the skin which in fact was the *sine qua non* of every attack as well as paroxysm of the disease, and I recommended in particular the keeping up a slight perspiration on the skin as the best means of avoiding relapses of Seringapatam fever. Can therefore a more likely cause of this pent up state of the skin, be supposed than the living in such a situation as old Cuddapah, the sun being equally powerful

during the day there as in other situations, or can there be any difficulty in conceiving that the heat of such a sun upon the pent up surface of those who sleep in such situations, should excite an attack of fever? do not also warm clothing, the inexposure to the cold air and in short the avoiding every thing which might tend to check the perspiration, aided by the abstaining from every thing, on the other hand, which might increase the force of the circulation, act as the best means for preventing attacks of fever? In short the idea I have advanced, will I trust appear much more simple, than that implying either the presence of jungly effluvia or of marsh miasmata neither of which has been as yet observed in any tangible shape and both of which, if they ever exist must also be attended by vicissitudes of temperature.

It is one advantage also of adopting this opinion, that it may teach us in every situation to apply our means in preventing attacks of fever and accordingly when this disease became so prevalent in the Extra Regiment that 10, or 12 cases were daily admitted into hospital, I recommended to the officer commanding the battalion to have the men out at drill at a later hour in the morning, to endeavour to make them keep within their huts and well covered up dur-

ing the night and to dissuade them from going about in the sun during the day, and I attribute in a considerable degree their not being more severely affected, under the constant drilling they necessarily underwent, to my recommendation being attended to.

There can be no doubt also that the continuance in a place where these vicissitudes of temperature take place in a great degree, or in other words where the cause of the disease still exists, must tend much to render the disease chronic, and to prevent the patient from getting rid of it; and on the other hand, even the smallest change to a more salubrious situation, where sudden changes of temperature are not present, or where the range of the thermometer is always too high to allow of any check to the perspiration must be advisable. It is no doubt therefore owing to the long continuance of the same description of weather which originally rendered the disease prevalent, to the inhabitants remaining in the unhealthy situations in which they had caught it, and with respect to the sepoys, to the addition of the peculiar circumstances of a new corps, that the fevers during the last 8 months have shown a particular tendency to become chronic.

It has indeed attracted the notice of the natives themselves, that the fevers of the present season

have not like those of other years affected them for a few days and then left them, but the attacks have continued to recur day after day, showing much more difficulty in their removal than has been hitherto experienced. With respect to the sepoys, this circumstance has been sufficiently evident and had my leisure admitted of the compilation of tables to the same extent as regarding the Seringapatam fever, the general average of the period during which the patients remained in hospital would have been greater than is seen to have been the usual proportion among the sepoys of the 1st Battalion 11th Regiment.

That this circumstance has in a considerable degree depended upon the constitution of the season, there can be little doubt, it being also much more conspicuous at some periods of the year than at others, particularly under the circumstances of dewy and cold nights and clear days; but it is also to be attributed in some measure, I believe to the peculiar circumstances of a new Regiment.

The extra Regt. has been raised within these last twelve months and is chiefly composed of young unformed sepoys, who not accustomed to be confined in a room full of sick people, have in general shown a great repugnance to come to

the hospital and have accordingly continued to do their duty, until the disease had in fact become habitual to them before admission. While in hospital also it has been found impossible to keep them from wandering to their houses and from committing various other irregularities, which have of course tended to keep up the accessions of their paroxysms and the disease has accordingly had its operations interfered with in bringing on a crisis.

At Seringapatam, on the other hand, the hospital was entirely surrounded by a high wall, which not only afforded shelter from the land wind, which I have no doubt is often deleterious to these patients but completely prevented the sick from wandering away from the hospital, or from doing any thing else which might have proved injurious, while the hospital, forming 4 sides of a square, the paved area in the centre was an admirably sheltered situation, for their eating the food which had been cooked and brought them by their relations. The Hindusthanees also, whose caste prevents them from eating excepting in the circle in which their victuals have been cooked, had no difficulty, from there being a well in the place, of effecting this operation within the wall of the hospital. The uninitiated Hindusthanees however of the

extra Regt. have been of necessity allowed some hours in the forenoon at a distance from the hospital for this purpose, all of which must tend to render the disease more habitual and I have often had occasion to regret the want of the accommodations of the Seringapatam hospital for my feverish patients at Cuddapah. From the above circumstances combined therefore and perhaps the higher degree of temperature in which they have occurred, the fevers at this place have not exhibited such a phlogistic state of the symptoms as at Seringapatam; the tongue has not been so generally of that florid hue, nor the fur upon it so white; there has not been that force and strength of the circulation, nor have the sweatings in remittents been so profuse, or the skin so tense and distended in the feel as at that station. There have been fewer instances accordingly of critical terminations to the disease by profuse evacuations of any description, and when diarhœa in particular has made its appearance, which has been not unusual, and the disease has often commenced with a degree of this, along with much flatulence in the bowels, I have found it more advisable to check it speedily than to allow it to continue with the effect simply of weakening the patient.

The various types which I have described as

being those most general at Seringapatam have also shown themselves most commonly at this station; there having been few or none of those more rare cases of tertian or quartan observed which have been alluded to in the *report*, and instances of the latter form of any description have been seldom witnessed. Many cases of double tertian have been noticed having their double paroxysms at nearly the same period as the single one, each paroxysm coming on generally in the morning, but one of them exhibiting a slight variety in its strength, or in its hour of attack or in afterwards disappearing and thus the disease becoming single tertian, while the usual description of double tertian mentioned in the report has also been extremely common.

The most conspicuous form of the disease however here, inasmuch as it has been that which has generally proved fatal, is one which did not show itself at Seringapatam, the affection of the sensorium which occurred in a few instances, during my sojourn there, having entirely a different character and appearance. This form of the remittent has been several times witnessed by me in other situatious and I conceive that the term typhoid remittent may be properly applied to it.

In the cases of this variety of fever which I

have had an opportunity of observing from their commencement, the symptoms for the first 2 or 3 days have not been different from those of other cases of remittent, the pulse in the remission ranging from 80 to 90, the skin often cool at this period and the tongue exhibiting nothing different from what is usual; suddenly however, a severe exacerbation of the disease takes place and either continues for two or 3 days together, or towards the morning, the pulse gradually lessens in frequency and the skin gets cooler but again an exacerbation of the fever takes place in some period of the fore or afternoon. With these exacerbations of the disease, delirium sooner or later becomes combined and the patient does not recover his senses in the remission; the first degree of this delirium is occasionally to be observed in a peculiar wildness of the eye, a feverish anxiety to anticipate our wishes in putting out the arm, showing the tongue, &c. or a hurried and confused manner of speaking; afterwards the patient is found muttering deliriously when left to himself, but upon being loudly called to he perfectly comprehends what is said to him, soon however reverting to his former state of delirium, or he lies speechless with a vacant stare in his eye, which is at the same time often suffused with a darkish redness.

In a very short time he becomes incapable of the above degree of recollection, or takes a longer time to understand what is said to him, and at last he either lies with his eyes shut moving his hands deliriously, or picks at the clothes about him, or perhaps he sits up looking around as if little was the matter with him, it is extraordinary also to what a late period of the disease, some of these patients show a degree of delirious strength which their previous appearance had induced one to believe had entirely left them. Some of those who have been in a state of delirium for several days and who apparently had been reduced to a great degree of debility, have been found to have wandered out towards their houses on the night previous to their dissolution, and I have frequently seen them wandering about the ward of the hospital, it being indeed impossible without violence to retain them in their proper places.

During the progress of this affection of the sensorium, they have generally a remission of the heat of skin and frequency of pulse in the morning and forenoon and an exacerbation afterwards, with the pulse ranging under this last state from 140 to 150, and always stringy, the heat of skin also being considerable in some of them, with parched tongue and considerable

restlessness, these symptoms in the remission gradually lowering, without any appearance of perspiration being the cause of such changes; sometimes however the skin has always been observed warmer than natural, and the symptoms of fever in general more violent than in others, while in the last few days of the disease there is occasionally a whole period passed over without any increase of the heat of skin, but the pulse extremely weak, fluttering and frequent.

There is also occasionally to be found considerable looseness and in some neglected cases which have come in at a late period of the disease, the stools have been watery and copious bringing on a more sudden termination to the patient, but in others they have been more scanty, have been passed in the cloths, often of a highly fetid smell and of a blackish green appearance, while in some instances, both their bilious tinge and their occurrence could be fairly referrible to the medicines which had been employed.

At length the patient, from increasing weakness, is found more quiet and shows fewer active symptoms of delirium and in some instances for a few days previous to death, there has been no very marked occurrence of an exacerbation of fever, the pulse has got rather less

frequent and a little fuller and the patient may upon the whole, altho', he is still insensible, appear somewhat better; his increasing weakness however soon dispels any favourable hope, his respiration is increased in frequency, becomes more difficult and is clogged with phlegm especially if there has been any tendency to cough previously, his eyes are frequently seen red when he opens them on being loudly called to, his pulse gets so feeble and frequent that it cannot be counted and he soon expires.

This modification of fever appears to have taken place, sometimes on a tertian type and at others quotidian, has been more frequent since the increase of heat in the season among the sepoys, than in the colder months, but has been observed at all periods of the year in the jail, and its chief subjects are Hindus, generally those who have continued doing their duty, for some days after they have been attacked with their disease. Its progress accordingly has been more or less rapid in proportion to the period at which they have reported sick, the violence of the paroxysms of fever, with which it has been accompanied, or preceded, and the absence or otherwise of a loose state of the bowels and the degree of this, and excepting in some of the stools, I have observed no indication of any overflow of bile attending the disease.

I am also inclined to consider as a modification of this variety of fever, a peculiar disease which I have witnessed in the very hot weather here among some of the Europeans of the place. I attribute it to the use of wet tats during the day and the immediate change from a temperature rendered low by these means to that of 106 or 108° in the evening, when from the ceasing of the wind, the tats became useless and an oppressive night was to be spent under these circumstances, the thermometer only falling to 96° before the following morning. Those who had indulged accordingly in the low temperature during the day were oppressed with heat during the night, little or no perspiration came out upon their skins, a painful sense of weight was felt upon their breath, they had great restlessness, and their slumbers were broke by every approach to sleep leading them into a talking reverie; the transition into delirium from this state was but small, and the first alarming symptom in an officer who died in a few days was the delirious raving he was found to be affected with at night. He had afterwards a slight remission of the symptoms for a day or two, but an exacerbation with coma suddenly carried him off. I only witnessed these appearances in the very hot season of 1825 and in the hottest part of that season.

I have also observed in two or three instances, the attack of fever take place with a state of maniacal delirium; this in two of them was removed by an immediate and full blood-letting, and the fever afterwards turned out a mild one.

Some late cases of fever also, chiefly relapses of chronic remittents have proved of a more violent description than usual, and from the repeated paroxysms, simply of the disease sometimes accompanied with a looseness in the bowels, a constant degree of warmth in the skin, with a thready pulse and without any perspiration, have ultimately proved fatal, there being however few or no symptoms of delirium, until immediately preceding the dissolution.

Other appearances occasionally manifesting themselves, have been, a sudden failure of the *vis vitæ* occasionally with delirium and sometimes putting on the appearance of a case of cholera; hiccup, which in two instances continued nearly constant for several days, until the patients died, but in others gradually left them; jaundiced eyes in a few instances, which however appeared more the effect of diseased liver or affection of the biliary ducts than of any extraordinary formation of bile in the disease, and one extraordinary case where the eyes were of an *orange* colour, proceeding from their being

deeply jaundiced and at the same time suffused with blood vessels; the urine at the same time was like a deep infusion of turmeric and the red suffusion disappearing in two days, the yellow appearance also gradually left the patient.

I regret that my leisure will not allow me more particularly to enter upon these symptoms and I have only to add a few observations respecting some parts of the treatment of these fevers generally. I have continued to practise the cure of many of these cases by keeping up a state of moisture on the skin at the expected period of the accession of fever as mentioned in the report from Seringapatam and when properly applied with sufficient success. The result of all my experience has been to prove the truth of what I have stated before and what indeed has been stated by much greater authority, that previous to every exacerbation of fever, or paroxysm of intermittent, the pores of the skin become shut, and it is upon this state that the increase of fever is established. I have paid particular attention to this point and have never yet seen the cold fit of fever with a moist state of the skin, some instances which the patients have mentioned to the contrary being simply a chill from a blast of wind upon a perspiring surface.

I have therefore had no hesitation in assuring

my European patients, for whose treatment, I adopted this system, previous to the sulphate of quina coming into practice, that if a state of moisture could be kept upon their skins until after the period of fever had passed over, they would get rid of their disease and I could refer with confidence to them at the present moment to prove that they have never been disappointed. It is not however much calculated for hospital practice among the natives and I have found it particularly so among the young sepoys of the extra Regt. In keeping up the perspiratory process during the above mentioned period, the efforts of the patient must go hand in hand with those of the physician and the slightest irregularity often renders all our precautions ineffectual. Among my patients in the jail however, where they are more under command many cases have been cured under this system alone and in all cases I have thought it advisable to shelter the feverish patients at the period of the approach of their fevers, while a dose of opium has generally been given at the usual distance of time previous to the attack, more especially, if in former paroxysms this has been attended with any purging or vomiting which the opium has generally prevented.

It is obvious however that in cases where little

or no perspiration ever makes its appearance on the skin, as in the more violent and in chronic remittents, this system is entirely inapplicable, the means applied for producing the perspiration only tending to increase the sense of warmth and frequency of pulse without having any effect in preventing the paroxysm. In intetermittent cases also which have become chronic, the perspiring plan has often been found to fail while it requires means which are not always available; the acquisition therefore of a remedy in the sulphate of quina which is possessed of specific and certain powers in checking the whole phenomena of the paroxysms of fever, striking apparently at their very root, must be considered of more importance to our profession, particularly in this country, than that of any other medicine, perhaps since the discovery of opium.

To fully appreciate the value of this medicine a person must have observed as I have many times had the mortification of witnessing, cases of fever in which the paroxysms have occurred, day after day, destroying the constitution of the patient and resisting all the remedies which our means have furnished, when immediately on a small supply of the quinine being received, 3 small pills, or at the utmost 6

or 7 containing in each, only one grain of this medicine effects what we have hitherto fruitlessly attempted. Its powers indeed in so small a quantity and so immediately, are so astonishing, and this in checking the whole train of symptoms in the febrile paroxysm, rooted in the constitution perhaps by many returns, that they appear more like those of a supernatural agent, than of any other medicine we are at present acquainted with. I have already had the honour of forwarding to the Board the result of my practice in 21 cases of fever, almost every one of them chronic ones and in all of which it proved immediately effectual in checking the paroxysms, being at that time, with 4 exceptions, the whole of the cases I had treated with this medicine. Since that period, my experience has been further extended, and I have no reason to doubt the powers of the quinine as therein exhibited.

These do not appear to operate by keeping up a state of moisture on the skin, affecting the pulse, or exciting any critical evacuation. They evidently act upon the more minute and incipient changes which precede any tangible symptom of such description. In the chronic remittent cases in which it has been given and in which, little or no perspiration is at any time to be observed, the skin has continued equally dry

at the usual hour of the accession of the fever, the pulse upon these occasions has not exhibited any less frequency than in former remissions, sometimes indeed it is a little more frequent, nor is it more full than it usually is in such cases, the only effect evident, is the continuance of the coolness of the skin, or if some slight degree of warmth may have been present on former remissions, it is now found to have entirely left the surface and none of the other symptoms of fever follow. The same effect has also been observed to take place in chronic intermittents and in the few cases both of remittent and intermittent in which I have exhibited it in the earlier paroxysms.

With regard to the typhoid and other more violent forms of these diseases, I have to regret that the limited quantity of the sulphate of quina which I have had at my disposal, has often tempted me to refrain from exhibiting it in most of these cases, until too late, or when given, it has been in such small quantities, that I do not think myself warranted in speaking decidedly regarding my experience respecting them. In some cases however it has been decidedly effectual in checking the tendency to exacerbation of the fever, leaving the delirium and debility remaining, and in one case these were afterwards

removed under the exhibition of the pulv. cinchon. and wine; I therefore confidently believe that it will be found the most effectual remedy in these forms of remittent, but it will have the greater chance of being of use, the earlier the period at which it is given, the first symptom of remission, even the diminution of a few beats in the pulse being taken advantage of for this purpose. There are indeed some cases of sudden failure of the *vis vitæ*, or others where the disease may begin at once so violently or be found so on admission, with severe fever continuing along with increasing debility for 2 or 3 days, in which this medicine may not have an opportunity of acting, but even in this last case, should it not be found to have any direct effect in diminishing the degree of fever already existing, still it is to be recollected that a remission may take place, which if another paroxysm had been prevented, might have gone on to recovery; even, with this state of fever existing therefore, I think the exhibition of the sulphate of quina would be warranted, especially as a state of fever, occurring in the interval from its being taken does not appear to annul its effects on the constitution, as I have several times observed the second paroxysm stopped from the medicine which had been given previous to the first one, none having been given afterwards.

The same scanty supply as is above alluded to has obliged me in other cases to exhibit the smallest quantity which had any chance of being effectual and I have been happy to find that it may be given with success in the usual cases of fever in a much smaller proportion than has been as yet suggested.

In the document No. 3 at the end of this paper will be seen a short abstract of cases in which a very minute portion of the medicine has been completely effectual in checking all the usual descriptions of fever. Besides the cases, also, in that abstract, several others have been treated by me among out patients; in several children from 6 to 10 years of age, from 3 to 6 grains stopt the progress of the fever and in one child of 15 months old 1 grain divided into two doses was immediately effectual; one woman with severe tertian and vomiting had the paroxysm prevented by 1 grain given 3 times along with a dose of tinct. opii in the morning of her attack; several other persons also had their fevers checked by from 4 to 7 grains, either given on one day proving effectual, or the half on one day, with an attack, and the remainder preceding the next period of fever; one of my vaccinators had a quartan stopt by 4 grains on one day with a less attack, and 3 before the next period, and a

woman had a quartan of 9 months standing cured by 3 grains on one day with the attack much later and 3 on the following day, entirely preventing it. I have also exhibited it in a quantity of from 4 to 10 grains to 3 Europeans with the same success, but they had also been taking the pulv. cinchonæ. The exhibition of this medicine however, does not appear to prevent future relapses in a greater degree than the latter article, more especially given in the small quantities I have been able to afford it to my patients. I have latterly exhibited it in one grain doses, and given it at intervals within the six hours immediately preceding the paroxysm of fever.

The pulv. cinchonæ however has been the medicine I have been obliged to chiefly trust to in the treatment of the greater number of cases which have occurred, and its value has been the more appreciated from my having occasionally been deprived of its powerful aid. In all the cases in which I used it at Seringapatam, I have also found it, even more generally successful here and in the more violent remittents, I have considered it as the chief remedy. In these my rule has been to give it in half dram doses every hour during the period of the skin being cool and when this has got warm it has constantly

been spunged with cold water. In the low state also of the typhoid remittent, I have joined it with arrack and wine and in these circumstances generally continued its use, thro' the scarcely formed exacerbation. In some instances, I have conjoined it with calomel and this last, more particularly, with antimonials in the earlier exacerbations. I have given the above doses of the bark, from not being able to furnish it in larger proportion but I imagine that larger doses would have been proportionately more successful; several individuals however have recovered under the above treatment, altho' this form of the disease is generally fatal. In the more common forms of intermittents, I have conceived the best time for the exhibition of this medicine to be in the interval of 6 or 8 hours previous to the usual period of the paroxysm.

Mercury, or rather its preparation, calomel, I have used in almost every description of fever and in all manner of doses from ½ a grain to one scruple, but the result of all my experience is certainly not in its favour. There is little doubt that the cessation of the paroxysms of fever and the mouth's getting sore are often simultaneous occurrences and the former may be referred to the feverish state excited by the mercury preventing the formation of such paroxysm, altho'

the arguments are equally strong in favour of the opinion, that the presence of the fever prevents the mercury from taking effect, and this idea is also countenanced by the number of patients whose mouths have got immediately sore on the fever having been stopt by the sulphate of quinine, they having been previously taking mercury. Be this as it may, the fetid, ulcerated and often bleeding mouth caused by this medicine, the protracted convalescence in consequence, the frequent affections of the bowels, by the calomel and perhaps the tendency to relapses excited by it, have all made me very reluctant, latterly, to make use of mercury. Many of my patients who have been in hospital simply with the sore mouths in consequence have had frequent relapses when this state has continued, several cases, even, have had the attacks of fever continuing, of their original fever, after their mouths had become ulcerated, and with few exceptions, every person who has had his mouth made sore from mercury has soon become subject to his former disorder, while, I have little doubt that the terror it inflicts among the natives, even extending to the wives and families of those affected, has prevented many of the sick from coming into hospital, until their duties could not possibly be otherwise avoided.

Upon the whole, my opinion with regard to this medicine in fever is as follows; that in intermittents and chronic remittents it may always be superseded by the sulphate of quina when procurable, or in most cases by the pulv. cinchonæ; in remittents, when mild and critical, such as the generality of those at Seringapatam, it is not necessary; in typhoid and other more violent remittent, the sulphate of quina is much more likely to be successful, and in short, that the use of mercury to salivate a feverish patient, with the view to stop the paroxysms of his disease, must in every instance be considered as an acknowledgement, that our other more powerful means are not available.

This opinion however is to be considered, as having been formed from experience among natives; to Europeans, I have seldom or ever conceived it necessary to exhibit mercury in their attacks of fever and excepting in the instance of the officer above mentioned who died in the hot weather, have never had any of my patients of this class affected with this medicine, given with this view. I have at the same time, the satisfaction of thinking that I have had no cause to regret my not having placed them in this condition, nor do I conceive that their diseases would have been cured more

speedily or effectually than by the mode which I adopted. This has been chiefly by suiting my remedies to the state of the patient's paroxysms as was practised by me at Seringapatam with a greater confidence however in this effect, by the use of the sulphate of quina, or the bark previous to the former coming into use, and I have had every reason to be satisfied with the success of this plan of treatment. It requires perhaps more attention to the phenomena of each case of fever, than that which directs the simply affecting the mouth with mercury, but it appears to me to constitute the grand secret in the cure of all remittent and intermittent fevers, as they usually occur to us in this country.

W. GEDDES,

ASSISTANT SURGEON.

Zillah of Cuddapah.

CUDDAPAH.
12th March, 1827.

DOCUMENTS

Referred to in the Text.

No. I.
DAILY REGISTER
OF THE
Weather at Cuddapah,

From 1st *May* 1826, *to the* 1st *January* 1827.

May.	Sun-rise.	8 a. m.	Noon.	2 p. m.	4½ p. m.	
1	93½	95	99¼	101	104	Breeze came round from West to East between 3 and 4 p. m.
2	93¼	94	98	101½	103½	As the 1st
3	91	93	100¼	102	103½	Breeze chiefly from the East increased much in afternoon.
4	92½	93	100½	101¾	102½	Ditto ditto.
5	92	92¼	97	99½	99½	Ditto ditto.
6	93	93¾	97½	99½	99½	Wind from West and lull in evening, rain with thunder in some parts of the district and lightning in the West at night.
7	95	94½	98½	99½	100½	Wind from Westward and thunder and lightning after dark, with rain in the night.
8	39½	89½	93½	95½	96½	Wind from Westward, morning cloudy with thunder and a cloud passed near this raining.
9	92	91½	95½	97	98	Westwardly wind.
10	94	94	98	98½	99¼	Thunder and lightning after dark and night clouded, no rain.
11	94½	94½	97½	100	99½	Some thunder and lightning at night with wind, sky over clouded and a little rain before midnight.
12	92½	93	96½	98	98½	Breeze Westwardly.
13	93½	95	97½	98½	99½	Lightning and rain at a distance.
14	95	95½	97	98	99	Much Westwardly wind thro' the day, lightning at night and some clouds on sky.

May.	Sun-rise.	10 a. m.	Noon.	2 p. m.	4½ p. m.	
15	94	94	96½	97	99	Breeze thro' the day from Westward.
16	93½	94½	96¼	98	99¼	Much wind thro' night and day from the West.
17	91¾	93	95	98	99	Ditto ditto.
18	91¼	92	95	96¾	98	Ditto ditto.
19	90¾	91½	94½	96¼	97	Ditto ditto.
20	90½	91½	94	95½	97	Ditto ditto.
21	90	91¼	94	95¼	96¼	Eclipse of moon totally at night, breeze rather less thro' the day.
22	89½	90½	93	94½	95¾	Wind not so strong and steady, cloudy layer on sky.
23	89½	92¼	94½	96½	97¼	Ditto ditto, and clouds forming remain after dark.
24	92½	93	95½	94½	94½	Much wind in earlier part of day, various cloudy appearances on the sky and thunder heard at 2 p. m.
25	91½	93	95	95½	95½	Steady breeze from the Westward, various clouds on the sky and lightning at night with appearance of falling stars.
26	91½	94½	96¼	97½	98	Breeze thro' the day, less at night and increased at 3 a. m. bringing clouds on the sky.
27	92½	94	95	96¼	91¾	After 2 p. m. Various thundering clouds around, with much wind and letting fall rain at a distance.
28	89	92	93¾	95½	95½	Thundering clouds, with rain all around after 3 p. m, on till 7 p. m. slight rain with much wind at Cuddapah.
29	86½	89¾	92	93½	94	Thundering clouds formed in the afternoon and with much wind and sand, after 6 p. m. heavy rain for an hour.
30	86¾	87½	88½	90½	90½	Slight breeze from the West, clear blue sky with clouds, lightning at night.
31	88	89½	91¼	93¼	93½	Clear blue sky, with clouds forming on it as day advanced and thundering clouds and considerable rain in the evening till 11 p. m.

June.	Sun-rise.	10 a. m.	Noon.	2 p. m.	4½ p. m.	
1	87½	88	89	90¼	90½	Clear blue sky with clouds and slight breeze at times from the West night sultry with lightning and thunder heard at day light.
2	86¼	84¼	86¼	88	88½	Rain from day light on till 9 a. m. and again at 10 a. m. with thunder and lightning night again overclouded with distant thunder and lightning, no rain.
3	85¼	85½	86½	87	87	Morning over clouded from the North West with a slight breeze and several heavy showers after 6 a. m. again rain from before noon till 1 p. m. and again from midnight till past day light with thunder and lightning.
4	83½	85¼	86¼	87½	87¼	Cleared up after 6 a. m. but cloudy and at 5 p. m. raining on the hills and at 8 p. m. with a slight breeze commenced here and continued very heavy at times and scarcely ceasing till 7 a. m. next morning.
5	82¼	83	85	86	86½	Steady wind thro' the day, with passing clouds and no rain.
6	82	84	86½	87½	89½	Ditto ditto.
7	83½	85	86½	88½	89½	Breeze with some haze on the sky and loose clouds passing over.
8	84¼	85	87½	87½	88	Deep haze on the sky and clouds passing on it let down rain with wind especially on the hills.
9	84½	85	87½	89½	85	Haze on the sky and clouds with wind and a few drops of rain, until 3½ p. m. when with much wind, rain commenced and continued heavily till nearly 5 and again after sun set it rained heavily till nearly 8 o'clock.
10	82½	83	85	88	86	Considerable wind and clouds passing over with rain on hills.
11	81½	83	87	88	89	A haze on the sky with clouds passing over on it, some letting down rain on the hills at 3 p. m.
12	84	87	88	90	90	As yesterday, but towards evening, clouds forming in West, came over letting fall a heavy shower.
13	84½	85½	88½	90½	92	Clouds passing over on a clear sky, without much wind; a thunder storm after dark in the South, a little of which with drops of rain was blown here.
14	85½	86½	88½	90¼	91	Clouds passing over with occasional gusts of wind from the West.
15	85	86½	89	90½	91	Clouds passsing over as yesterday, but a whitish layer above them.

June.	Sun-rise.	10 a. m.	Noon.	2 p. m.	4½ p. m.	
16	85¾	87	89½	91	91½	As yesterday layer of a darker colour and breeze increased in the evening.
17	86½	87	89	89½	90¼	As yesterday, but layer disappeared, clouds more white and some letting fall rain in passing in the afternoon.
18	86	87½	91	92	93	....
19	86½	88			92¾	Considerable wind with a few clouds passing over.
20	87¾	87½	89	90	85	Watery clouds began coming over at noon and after 2 several showers came over with a heavy one preceded by much wind at nearly 4 p.m. & continued more or less till midnight.
21	83	82½	83½	84	85½	Rain again in morning slightly till 10 a. m. and sky over clouded during the day with a shower at 2 p. m. and a heavy one from 6 p. m. with drizzling till 9 p. m.
22	81½	82½	84½	85½	85	Considerable Westerly wind with occasional clouds passing over on a hazy sky, some few drops from them and more during the night.
23	81		86½	88¼	88½	As yesterday, with more rain in the hills in the evening.
24	82½		86½	88¾	90	As yesterday.
25	84¼		88½	89½	90¾	Hazy disappeared sky clear blue with white clouds some letting fall rain on the hills, in the evening; lightning at night.
26	84¾		89½	91¾	90¼	As yesterday, with steady wind from the West and some clouds on passing letting fall a few drops of rain.
27	84½		8[illegible]	90½	90¾	Less wind with a cloudy layer behind the clouds, rain from some of them in the evening and thunder and lightning with rain on till day light.
28	83½		87½	89	94¼	Sultry with various clouds, evening calm and serene, but during the night it re-commenced raining and much fell on till day light.
29	83		86½	88	89¾	As yesterday, large banks forming each night on the horizon and about 2 a. m. it commenced to rain heavily, continuing for some time.
30	83		86½	87½	87½	A few drops of rain from the white clouds during the day and night became over cast or the preceding ones, but no rain

July.	Sun-rise.	Noon.	2 p. m.	4½ p. m.	
1	83¼	86¼	86¾	87¾	Thunder and rain in morning, day sultry with haze and clouds on sky; thunder in the afternoon and lightning at night.
2	83½	85¾	87¼	87¾	Haze on sky with slight breeze in the day and at night a squall with some rain and more to the Westward.
3	83½	86¼	88¼	88½	Haze on sky with Westwardly breeze and clouds coming over letting down in the afternoon rain on the hills, a squall at night, but no rain.
4	83½	87¾	89¼	89¾	A breeze from the West thro' the day and haziness with clouds passing over some of them letting down rain on the hills.
5	84½	88¼	89½	86	As yesterday, but clouds larger and letting down a considerable quantity of rain in all places, and night cloudy.
6	84½	87¾	89½	89¾	Morning cloudy, otherwise as yesterday, without so much rain from the clouds and passing wind continued after dark.
7	84½	89¾	89½	90¼	Hazy with clouds passing over, a squall with some rain in the evening considerable wind thro' the day and continuing in the evening.
8	84½	89	90	90¾	Haziness considerably cleared away and clouds passing over more white, with some rain on hills, night cloudy with wind.
9	85½	88½	89½	90½	Haziness in morning, cleared away with the wind during the day, clouds passing over and some rain from them in the evening at a distance.
10	85	85	85¾	87¼	White layer of cloud and some clouds passing over with a few drops of rain in the forenoon breeze rather less and with a cool impression.
11	83¾	86½	89½	89½	Sky more clear and clouds passing over, some of them letting fall rain in the evening with wind increased, thunder heard in the evening and night cloudy.
12	84½	87	87¾	89½	Day very hazy with clouds passing over and after 6 p. m. some of them letting down a considerable rain with steady wind afterwards.
13	82½	84½	86½	89	Morning clouded with some drops falling, day hazy with considerable wind and clouds passing over, wind continued till late at night.

July.	Sun-rise.	Noon.	2 p. m.	4½ p. m.	
14	83½	86½	88	89½	Wind continuing with haze on the sky, and clouds passing over letting down rain on the hills in the evening.
15	83½	90	91½	90½	Wind, hazy and clouds passing over as yesterday.
16	84½	86½	85½	81½	Wind continuing, clouds passing over more watery, with some rain in the morning and at noon and after 2, much increase of rain on till 7 p. m. and again from 10 p. m. during the night.
17	80½	83	82¾	82¾	Sky over clouded with slight rain on till 10 a. m. much wind thro' the day and drops of rain blown with it in the evening.
18	78½	82	84½	81¼	Some rain falling in morning till 11 a. m. afterwards clouds passing over with much wind and after 3 p. m. much rain on till 8 p. m.
19	79½	82½	83½	83½	Slight rain at day light, clouds passing over all day, with considerable wind, some letting fall rain at noon, and after 4 p. m. more rain fell on to 5 p. m.
20	80½	84	86½	,,	Clouds passing over all day, slight rain with wind at 5 p. m.
21	81¾	85¼	87	87½	Steady breeze from 9 a. m. and clouds passing over on a hazy sky.
22	82½	86	86¼	87½	Some rain before day break afterwards as yesterday.
23	83	86½	88¼	89	Morning cloudy, afterwards haze and clouds passing over with much wind some rain from them on hills and with increase of haze slight rain here from 7 to 9 p. m.
24	83½	86½	88	89	Hazy sky and clouds passing over, some letting fall rain on hills in the evening.
25	83¼	89½	91	91¼	Haze disappeared and white clouds passing over on clear sky and otherwise as yesterday.
26	85	89	92	92	More clouds passing over on a clear sky, otherwise as yesterday, wind continuing at night.
27	84½	88¼	88¾	,,	Less wind some haze on the sky intermixed with deep blue and some loose clouds disappearing at night.
28	85	88¾	90½	90½	As yesterday, but some clouds passing over and letting fall some rain on hills at 5 p. m.
29	85	88¾	89½	90¼	Slight but steady breeze with a few clouds passing over and haze near the horizon.
30	84¼	89¾	91½	91½	Haze come across the sky and steady wind with some clouds passing in the day, a squall with some rain in the evening.
31	85	89½	90½	88	Less wind with more clear blue sky and large white clouds formed, which let down a good deal of rain in various places on from 2 to 5 p. m.

August.	Sun-rise.	Noon.	2 p. m.	4½ p. m.	
1	83¼	85½	88¼	,,	Deep blue sky without any steady wind and some white clouds letting fall a little rain especially on hills ; night yet cloudy and much rain fell.
2	83	84½	85¼	86	As yesterday and much rain fell after 11½ p. m.
3	82	86	86½	87½	Slight breeze from the West to day, clouds let fall little rain after 2 p m. night clear.
4	83¼	86½	87½	87½	Haze on sky with cloud upon it, not much steady wind ; in the evening a rainy cloud formed and came across with some rain and wind about 7 p. m.
5	82½	85½	86	87½	Haze on sky and clouds without much wind, lightning in North at night.
6	82½	86	87½	88½	Haze on sky and clouds passing over with some rain on the hills at 5 p. m. afterwards clouds thinned away and a slight breeze thro' the night.
7	83¼	85¼	86¼	85¼	Loose clouds passing over with a slight breeze, with slight rain in forenoon, but one more heavily between 3 and 4 p. m. particularly on hills, night calm.
8	82¾	86	87½	88	Rain on hills in morning clouds letting fall rain in day time, on a clear blue sky, particularly in the evening and distant thunder.
9	82	86	87½	87½	Hazy with slight breeze and a few clouds, some rain at a distance in the evening.
10	83¼	87¾	89	91	White clouds on a clear sky, with thunder in afternoon, evening calm and clear with lightning in the North
11	84½	88¾	89¾	90½	Ushered in by wind and clouds, white dense masses and a clear sky afterwards with afternoon hazy, rain on the hills lightning in the South at night and very heavy rain fell on from midnight to nearly day break.
12	83¼	88½	89¾	89½	Sultry with white clouds and clear sky and little wind, some clouds letting fall rain in evening, and sky over clouded, with much rain and thunder from 10 p. m. to 2 a. m.
13	82½	86	87½	88	Day as yesterday, clear blue sky, little wind and various white conical clouds. night clear and calm and lightning in the East.
14	83¾	87¼	89	83	Clouds on clear sky, some letting fall rain at noon on the hills and at times thro' the day, at nearly 4 p. m. a heavy shower for an hour.

August.	Sun-rise.	Noon.	2 p. m.	4½ p. m.	
15	80½	84½	86	87	Several showers at day break, afterwards day sultry with various clouds and clear sky, in evening several clouds letting fall rain around and sky cloudy at nights.
16	82½	84	85½	86¾	More wind than usual in forenoon and clouds passing over, afterwards less and blue sky, clouds forming during the day, disappearing at night.
17	82¼	85	86¼	87½	Clouds letting fall a little rain after day break, in forenoon large white clouds and clear sky, rising up from the horizon at night, night over clouded much rain on from past 2 a. m. till nearly day light.
18	81½	84	85	86¼	After day light, again rain for an hour, and fore and afternoon many clouds and sultry. Evening pretty clear, but rain commenced next morning.
19	80¾	84	86¼	86	Continued till day break day sultry with clouls and clear sky, thunder afternoon and lightning after dark, with night over clouded and rain at 2 a. m.
20	81	84½	84¾	86¼	Clouds and clear sultry day as yesterday, some clouds letting fall rain on hills at 2 p. m. and lightning after dark, with sky overcast at night, but no rain.
21	83	86	87	,,	A slight shower from a cloud in the morning, day sultry with clouds and layers of cloud on the sky, after dark lightning in S. West and towards morning a good deal of wind.
22	82¾	84½	85¼	86	Sky covered with a haze and loose clouds upon it and some rain on the hills at 2 p. m. afterwards more cleared up and sultry.
23	82½	33½	86	85½	Sky over clouded with some rain especially on hills in morning and forenoon, day sultry, night over clouded with lightning and much rain fell from 10 p. m.
24	80¾	81½	83	83	A few drops falling at day light, during the day also much on the hills and a slight wind from the West, night at first cleared and then became clouded.
25	80	82	83¼	84	Day hazy with some clouds and occasional wind; a few drops of rain in the forenoon and evening, night hazy and slight rain.
26	80¼	83¾	84½	86	A good deal of wind from the West and various clouds upon the sky during the day, at 10 p. m. dark clouds on the sky and heavy rain, with distant thunder, fell from 1 a. m. till day light.

August.	Sun-rise.	Noon.	2 p. m.	$4\frac{1}{2}$ p. m.	
27	79	80	$80\frac{3}{4}$	80	Rain continued falling on till 9 a. m. and from 11 a. m. very constant till 4 p. m. with a slight air rain from the West, after 6 p. m. again rain till 9 p. m. and occasionally in the night.
28	79	$82\frac{1}{2}$	$83\frac{3}{4}$	83	Some rain at day break, afterwards occasional clouds passing over letting fall a little; thunder with clouds on sky in the afternoon; wind at night with some drizzling rain from 7 to 8 p. m. and after 2 a. m. much rain fell in several heavy showers.
29	$79\frac{1}{2}$	$81\frac{3}{4}$	$83\frac{3}{4}$	$83\frac{3}{4}$	Sky a clear blue, with white clouds on it, some wind in forenoon, ceasing afterwards, night at first clear, but heavy rain after 2 a. m.
30	$80\frac{1}{2}$	$82\frac{1}{4}$	83	$82\frac{1}{2}$	Rain on hills at day break and a thunder storm there at 9 a. m. showers passing over, some of them heavy from 1 to 3 p. m. afterwards evening calm, but wind and rain at midnight and a considerable fall.
31	$79\frac{1}{2}$	$81\frac{1}{2}$	$81\frac{1}{2}$	$81\frac{3}{4}$	Morning cloudy and showers passed over, some of them heavy from noon till past 2 p. m. afterwards night calm and sultry.
September.					
1	$79\frac{1}{2}$	$83\frac{1}{2}$	83	$83\frac{1}{4}$	Hazy and some clouds passing over with a slight breeze, some clouds letting fall rain on the hills, night cloudy.
2	$79\frac{1}{2}$	84	85	84	A steady breeze blowing throughout the day and evening, with clouds no rain.
3	$80\frac{1}{2}$	$83\frac{1}{2}$	86	83	A good many clouds passing over with wind and after 2 p. m. several heavy showers with much wind and thunder and lightning on the hills, especially at 5 and 6 p. m. night fair.
4	$79\frac{1}{2}$	$83\frac{1}{4}$	$84\frac{1}{2}$	85	Considerable wind and watery clouds passing over with rain on hills and slightly below at 7 p. m. with wind.
5	80	$83\frac{1}{2}$	84	$84\frac{3}{4}$	Wind and clouds passing over as yesterday, with rain at $1\frac{1}{2}$ p. m. and on the hills in the evening, wind and rain after midnight, until nearly 3 a. m. occasionally heavy.
6	80	$82\frac{1}{4}$	$82\frac{1}{4}$	$81\frac{3}{4}$	Wind and some rain in the West in the morning, clouds passing over and considerable wind with some drops of rain in forenoon and a good deal at 3 p. m.; at 6 p. m. also sky became over cast and considerable rain fell from $\frac{1}{2}$ past till after 9. p. m.

September.	Sun-rise.	Noon.	2 p. m.	4½ p. m.	
7	79	81½	83	,,	Clouds passing across letting fall some rain in forenoon, and afternoon, sky overcast and after 5 p. m. occasional rain, sometimes heavy till 10 p. m. and afterwards at 2 a. m.
8	78½	80½	81	81½	Some drizzling rain at noon, afterwards slight wind with clear blue sky and various clouds after dark, and cool breeze from West and some clouds on sky at night.
9	79½	82¾	82½	81	A good deal of wind from the West and various showers passing over in the afternoon, darkness and thunder on the hills and masses of clouds in the evening.
10	79½	81	83	81	Wind and drizzling rain occasionally heavy thro' morning and forenoon, afterwards cleared up until 3 p. m. when thunder was heard and much rain fell from 4 till 8 p. m. with thunder and lightning.
11	79	81	81½	82¾	A few drops of rain in morning, afterwards clouds passing over until afternoon, when wind and clouds lessened rain in West in the evening and wind at night.
12	79	83½	84¾	84¾	Clouds and considerable wind all day with some rain, especially in the evening.
13	80½	82¾	83	84	Morning cloudy with some large drops of rain, day hazy and clouds passing over and several showers from noon till 3 p. m. night over clouded.
14	80½	83	84¼	84½	As yesterday, with wind continuing in the night.
15	80¾	85	86		Considerable wind with clouds passing over, no rain wind at night.
16	81	85½	86¾	86¼	Slight dew, considerable wind and clouds passing over, night calm and serene as yesterday.
17	81½	86	86½	87¼	As yesterday,
18	81¾	84½	86¼	86	Ditto but somewhat hazy.
19	81¾	,,	86½	87¼	Less wind and some of the clouds letting fall a little rain, night cloudy and close.
20	83	,,	87½	87	Some slight drizzling rain in the morning, slight wind and various clouds on sky in the day and in the evening a few drops from one, afterwards, night clear.
21	82	86½	86¼	86½	Slight wind with some clouds on sky, generally disappearing at night.
22	82½	85¾	87¼	87½	Ditto do. and night quite clear.
23	82½	86½	88	88½	Dew very few clouds on sky, otherwise as yesterday.
24	81	85¾	87¾	88½	Dew and otherwise as yesterday, but a little more Westerly wind.

September.	Sun-rise.	Noon.	2 p. m.	4½ p. m.	
25	82¼	86½	87½	87¾	Dew rather more clouds, but disappearing at night.
26	81½	,,	87½	87¾	Dew and not much wind, sky more clear blue and sun sultry.
27	81¾	86¼	88	88½	Dew white lines on a dark blue sky and rather more wind, with clouds at night.
28	82¾	87	88½	86½	No dew, some clouds at day light and dense and large during the day, but disappearing at night, more wind.
29	83	88¼	89	88¾	A good many clouds and considerable haziness on the sky, especially towards the afternoon, little wind, and night at first clear.
30	83¼	88¼	89	88¼	Clouds on sky in the morning, getting larger in the day without regular wind and letting fall some rain in evening, night cloudy with lightning and a shower at 2 a. m.
October.					
1	82½	88½	89	88½	Various clouds on the sky during the day and some rain driven down the hills with a slight breeze from the West, increased in afternoon, night overclouded.
2	83	88	89	89½	Dew clouds formed on a clear sky throughout the day without much wind, disappeared towards the evening and a dry disagreeable wind sprung up from the South East.
3	84	88½	89¾	90	As yesterday.
4	83¼	88½	88½	89¼	Ditto do.
5	83½	87½	89	,,	Dew as yesterday, but in course of day, more wind in gusts from the West veering round to North and North East in the evening and clearing away the clouds.
6	81½	88	89½	89½	Dew clouds forming in day time as usual, but in the evening some came over from the North East and a little rain took place at night.
7	85½	88¼	90	85	Cloudy layer on the sky and a little rain on the hills in the morning, a slight breeze from the East shifting round to South in the forenoon and a rainy cloud passed over from the East in the afternoon, slight cloudy with wind from East.
8	,,	,,	,,	,,	These two days cloudy, disappearing at night without any rain.
9	,,	,,	,,	,,	
10	,,	,,	91	85½	At 2 p. m. a rainy cloud with thunder from the East as on the 7th and a slight breeze from the North East in the evening, clouds disappearing.

October.	Sun-rise.	Noon.	2 p. m.	4½ p. m.	
11	84	88	89¼	89½	Some clouds formed on a clear sky throughout the day, with a slight breeze from the East, disappearing towards night.
12	82½	88	89¼	89¾	Dew otherwise as yesterday.
13	82½	87¾	89¾	89¼	Ditto some lines on sky with small clouds and no regular wind.
14	81¾	88½	89¾	„	Ditto do. with haze on sky at night and halo round the moon.
15	82½	86¾	87¼	87½	Hazy sky with wind from East, dense haze on sky at night.
16	82	83	82½	80½	Haze increased till noon when some drops fell from it and rain more or less, never very heavy, throughout the evening, more so during the night.
17	76¼	75½	76½	74½	Rain driven in gust from the West during the day, more or less heavy and a steady wind from the West after 2 p. m drizzling rain in the evening and night.
18	75	76	76¾	„	Still drizzling rain with occasional wind from the West, then shifted round at 10 a. m. to the South with increase of rain, afterwards drizzling with wind round to East and at dusk got fair.
19	76	79	80	81	Some rain on hills in forenoon, otherwise fair and sky clearing up without wind, night became overcast, some lightning was seen and a slight shower fell.
20	79	84	„	85	Various clouds seated on the sky, disappearing in the evening with a steady breeze from the East, lightning in the West at night.
21	80	85	88¾	85½	Much dew clouds forming on the sky in the day time without much wind and disappearing in the evening with a breeze from the South East.
22	80½	85½	87	87¼	As yesterday, sky a more clear blue.
23	81¾	87	87	88	Dew clouds large on a clear blue sky and some letting fall rain at noon on the hills, also in the evening, little wind, night clear with lightning.
24	82½	85½	87½	85¾	As yesterday clouds beautifully white, occasional thunder and lightning.
25	80¾	85	87½	87	As yesterday and a breeze from the North East in evening with lightning.
26	79¾	89	84½	84¼	Do. but more clouds on sky, letting down rain, some with thunder, breeze from the North East during the day and clear blue sky at night, but

October.	Sun-rise.	Noon.	2 p. m.	4½ p. m.	
27	79½	84	82¼	78½	towards morning heavy rain fell, at day light fair, but in forenoon clouds letting fall rain all around and occasionally in the afternoon, cool breeze from the North East in the evening, night over clouded.
28	78½	83¼	85	85	Dew clouds forming on a clear sky letting fall rain around steady breeze from North East afternoon, night cleared up and calm.
29	78	85	86	85¾	Much dew and as yesterday, but clouds less and no rain.
30	76	83½	85¼	84½	Much dew clouds as yesterday, but less wind and some clouds on sky after dark.
31	77½	85	86½	87½	Less dew a good many clouds at day light and some came over from the East letting fall a little rain afterwards a steady breeze from the North East clearing away the clouds and night clear.
November.					
1	77	86¾	87½	86¾	Considerable dew steady breeze from the East all day; with clouds on sky, disappearing at night but again forming.
2	79½	84½	84	83	A cloudy layer on the sky no dew and a steady breeze from the East with clouds coming over and some slight rain in the evening night warm and cloudy.
3	79	78¾	81¾	82¾	Loose clouds began coming from the East in the morning with drizzling rain, sometimes heavy from 10 a. m. to noon, afterwards cleared up with a slight breeze, but again sky overclouded and some rain at 8 p. m. night cloudy.
4	79½	77½	78½	78	Loose clouds coming on a hazy sky from the East in the morning, gradually lowering and at 8 a. m. rain began to fall heavily with thunder and it continued more or less on till the evening, then clearing up, but a dense fog at night.
5	76	82	,,	80	Fog continued, but cleared up in the morning and clouds on sky with as light breeze from the East increased in the afternoon.
6	76¼	82¼	81	82	Dew haze with loose clouds from the East increasing during the day distant thunder at 3 p. m. some drops of rain in afternoon, evening and night cloudy.

November.	Sun-rise.	Noon.	2 p. m.	$4\frac{1}{2}$ p. m.	
7	77	81	,,	$77\frac{1}{2}$	Steady wind from the East at day break, various clouds until 2 p. m. when a mass came over from the East and rained heavily at 3 p. m. again from 5 till 6 and from 7 p. m. during the night.
8	77	81	$80\frac{1}{2}$	$79\frac{3}{4}$	Clouds came over from the East letting down rain from noon and continued to let fall generally on the hills till 5 p. m.
9	$76\frac{1}{2}$	83	84	$76\frac{3}{4}$	Rain began coming from the East at day light shortly clearing up with a steady breeze from the East and a mass of clouds came over raining from 3 till 5 p. m. afterwards night haze.
10	$76\frac{3}{4}$	$80\frac{1}{4}$	$78\frac{1}{4}$	$77\frac{1}{4}$	Rain re-commenced at 5 a. m. and continued till $6\frac{1}{2}$ a. m. some drizzling rain at times in the forenoon and heavily from 1 to 2 p. m. and more or less on till 5 p. m. also, with an increase of wind after dark.
11	$75\frac{3}{4}$	$78\frac{3}{4}$	$78\frac{3}{4}$	$78\frac{1}{2}$	Clouds passing over quickly in the morning and afterwards there lowered towards noon, beginning to rain, raining clouds at intervals coming over during the day and after dark, and it continued raining heavily during all night.
12	$76\frac{3}{4}$	$79\frac{1}{2}$	$72\frac{1}{4}$	76	Raining at day break and on till 8 a. m. afterwards fair with clouds until 1 p. m. when a rainy mass came across from the East and continued raining heavily and with considerable wind at times during the whole evening and night, and
13	74	$75\frac{3}{4}$	$76\frac{1}{2}$	$76\frac{3}{4}$	at day break, drizzling rain, a little fair at 9 a. m. and again rain commenced shortly after and continued till 1 p. m. slight breeze from theEast afterwards and at 8 p. m. drizzling rain.
14	74	$76\frac{3}{4}$	$81\frac{1}{2}$	$82\frac{1}{4}$	Between 11 and 12 noon some rain and frequently on the hills, clouds on sky, with a steady breeze from the East afterwards, and once or twice a little rain.
15	$76\frac{1}{4}$	81	$82\frac{3}{4}$	,,	Breeze and clouds passing over and some rain from them in day and at night.
16	$76\frac{1}{4}$	$83\frac{1}{2}$	85	83	As yesterday with white clouds and clear blue sky, breeze increased in evening and cloudy.
17	77	84	$83\frac{1}{2}$	$83\frac{1}{2}$	Increase of wind lessening towards evening and bringing a cloudy layer on the sky.
18	78	$78\frac{1}{4}$	78	$73\frac{1}{2}$	Dew with little wind, clouds thickened on the sky, letting fall a few drops of rain in forenoon, after which it increased and rained more or less till dark

November.	Sun-rise.	Noon.	2 p. m.	4½ p. m.	
19	75½	75½	75	75½	Fair during the night, but rain began before day break and continued without intermission till past 2 p. m. and again drizzling rain during the night.
20	75½	,,	78½	79	Fog in morning afterwards cleared up till nearly noon, when large masses coming from the East let down much rain, afterwards a steady breeze from North East and some rain on the hills, with clear night!
21	76	81	83¼	81¾	Considerable dew various clouds let down rain on the hills during the day, with a breeze from the North East, on till evening night clear.
22	77	83¼	81¾	,,	Dew some drizzling rain at 10 a. m. afterwards a steady breeze from the East with various clouds on a clear sky and disappearing at night.
23	77½	82¾	84½	78¾	Dew some clouds on the hills letting fall rain in the forenoon and with a considerable breeze a heavy cloud came across with some rain and several of these flying about during the the evening.
24	77	82¼	83½	83	Clouds in general less with a slight breeze from the East, night clear.
25	76½	84¼	85	84¼	Dew steady breeze from the East with some clouds letting fall a little rain in the afternoon night clear
26	76½	83½	84¼	83¼	Much as yesterday, but clouds letting fall rain a little earlier in the day.
27	76¾	82	,,	83½	As yesterday, but only one cloud left fall some rain.
28	76½	83	83½	83¾	Dew few clouds to-day, no rain and a steady wind from the East.
29	76	82	84½	84	Dew clouds rather large, one letting fall a little rain in the evening.
30	76½	83½	84	82¾	Dew fewer clouds, no rain and considerable wind.
December.					
1	74	80	81½	81	Dew a few clouds formed in course of day, with a slight breeze from the East.
			1 p.m.	—	
2	71	,,	77	79	Much dew a very few small clouds on sky in the day with little wind.
3	69¾	,,	77	78	As yesterday, with a slight rain from the East in the afternoon.
4	68½	,,	77	80	Ditto Ditto but rather more wind of a cool feel and some more clouds in East.

December.	Sun-rise.	1 p. m.	4½ p. m.	
5	,,	77¾	78½	A cloudy layer came across the sky with a drizzling rain about noon afterwards clouds laying about the sky, night clouded and some rain next morning.
6	75½	81¼	76½	Flocculous masses on the sky, whitened by the sun during the day and at 2 p. m. much rain and some thunder came across from the South East, with a slight breeze and again between 6 and 7 a considerable quantity fell.
7	76½	78½	,,	Much as yesterday, several showers coming over from the East in the forenoon and at other times loose clouds hanging about, a slight breeze from the east.
8	75½	79½	78¼	As yesterday and some watery clouds come across the hills with rain at 1 p. m. and considerable breeze from thence throughout the day, clouds getting few and in the afternoon in the evening some drizzling rain and again at 8 p. m.
9	75½	79½	80	Morning cloudy from theEast, afterwards cleared up and a considerable breeze from thence
10	73	80	80	Dew—clouds floating over from the East with a slight breeze thro' the day.
11	74½	80	81	Ditto do.
12	73	81	82½	Ditto do. more wind and slight haziness in the Fast.
13	70¾	82¼	82	Ditto clouds rather larger and more dense, and some remaining on sky after dark.
14	71½	80½	80½	Ditto but more cloudiness and lines on the sky also hazy in first part of night.
15	71¼	80½	79¾	As yesterday, but clouds became more dense and haziness increased thro' the day and a steady breeze from the East continuing after dark with clouds floating upon a hazy sky there but no wind below.
16	74	75¼	,,	Watery clouds lowered in course of the morning and some drizzling rain then and in forenoon with a slight air at times from the East, also rain in evening and night.
17	72½	74½	74½	Clouds lowering all day with some wind, rain at 2 p. m. and more occasionally on the hills wind at night and some rain before day light
18	72¾	78½	78¼	Morning with large drops of rain and clouds all around, day cleared up with occasional sunshine and a breeze from the North East but at 2 p. m. clouds again lowered and continued with some slight rain after dark.

December.	Sun-rise.	2 p. m.	$4\frac{1}{2}$ p. m.	
19	$73\frac{3}{4}$	82	$81\frac{1}{2}$	Various clouds on sky during the day, with a steady breeze from the East, clouds thickened at night, but afterwards disappeared without rain.
20	$73\frac{1}{2}$	$81\frac{1}{2}$	$81\frac{1}{2}$	Slight dew a breeze from the East and fewer clouds, disappearing towards night.
21	$71\frac{1}{2}$	$81\frac{1}{2}$	$82\frac{3}{4}$	As yesterday clouds fewer, slight breeze in forenoon increased in afternoon.
22	71	$78\frac{1}{2}$	$81\frac{1}{2}$	Considerable dew, loose clouds passing quickly on the sky in the forenoon with a good many woved lines and a steady breeze from the North East.
23	$71\frac{1}{4}$	81	81	As yesterday but more haze on the sky, clearing away towards night.
24	71	81	$81\frac{3}{4}$	Dew a few clouds formed on a clear sky disappearing at night, and a slight wind from North East.
25	$70\frac{1}{2}$	80	$80\frac{1}{2}$	Dew as yesterday and at times breeze very steady.
26	$70\frac{1}{2}$	$80\frac{1}{2}$	$81\frac{1}{2}$	As yesterday
27	$69\frac{1}{2}$	$79\frac{1}{2}$	$80\frac{1}{2}$	Ditto Ditto more wind generally in the forenoon.
28	$70\frac{1}{4}$	$82\frac{1}{2}$	$82\frac{1}{2}$	More clouds on sky and dense with white layer behind them wind considerable throughout the day and clouds vanished at night.
29	73	$82\frac{3}{4}$	$82\frac{1}{2}$	Flocculous clouds on sky at day break and little dew, considerable wind in day time from East.
30	71	80	$83\frac{1}{2}$	Considerable dew otherwise as before.
31	70	$82\frac{1}{4}$	$83\frac{1}{4}$	As yesterday.

The Thermometer, upon which the above observations were made is kept in the Eastern Window of a small Bungalow, separated by a Verandah of about four feet from the open air, and situated seven feet from the ground. The hills mentioned, are several ranges, variously at a distance of from 3 to 10 miles, the nearest of which are low, but the most distant average from 1500 to 1700 feet above the level of Cuddapah.

No. II.

Table showing the admissions of Fever into Hospital of the 1st Extra Regt. on each day from 1st June, 1826, to 1st March, 1827. &c.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total.	No. of cases in hospital in end of mon.	Numer. strength of corps.	New Moon.	Full Moon.
June,...	1	0	1	0	×0	1	0	2	0	0	×0	0	0	0	0	1	0	×0	0	0	1	1	0	0	×0	0	0	0	0	1	0	9	1	583	5th.	20th.
July, ...	0	×1	1	0	3	0	1	0	×0	1	3	4	0	0	0	×0	0	2	0	0	0	0	×1	1	3	0	0	2	2	×0	4	29	12	683	5th.	19th.
August, ...	0	2	0	2	0	×3	0	2	0	1	0	0	×0	0	0	1	0	1	1	×0	4	0	0	0	0	0	×0	1	3	0	0	21	9	909	4th.	17th.
September,..	0	1	×3	0	0	0	0	0	1	×0	0	13	4	2	1	0	×1	4	3	2	1	2	3	×0	4	5	0	5	3	1	0	59	13	1080	2d.	16th.
October, ...	×1	0	0	1	1	1	1	×1	2	2	5	9	11	4	×0	4	0	2	13	3	10	×1	10	8	5	5	0	3	×0	1	0	104	31	1087	1st—31st	16th.
November, ..	10	3	2	3	×1	5	9	9	2	0	2	×2	1	11	4	1	5	2	×0	4	7	8	5	5	7	×6	13	10	11	15	0	163	86	948	29th.	14th.
December, ..	3	3	×0	5	8	4	5	15	4	×3	10	13	10	6	8	4	×5	4	1	11	6	5	2	×5	6	5	4	5	9	5	×6	180	60	926	29th.	14th.
January, ...	1	8	7	3	5	5	×4	5	6	3	3	2	2	×8	13	7	10	3	5	5	×3	6	11	8	1	2	0	×4	7	7	4	158	74	896	27th.	13th.
February, ...	6	10	9	×11	4	9	5	7	11	10	×8	7	9	3	1	2	4	×4	8	3	6	4	6	2	×2	3	3	4	0	0	0	161	43	886	26th.	12th.

OBSERVATIONS.—During the 9 months comprized in this table, the Regt. was almost daily at drill generally twice a day. Upon Sundays however they had often only a parade in the evening, and occasionally this also was excused them and the proportion of admissions into hospital, as also in the afternoon of the preceding Saturday will be found to have been considerably connected with these circumstances; I have accordingly thought it right to put a mark × to designate each Sunday. It is also to be remarked that the 15th, 16th, and 17th July for the Buckreed, from the 7th to the 19th Aug. for the Muhunim, both Mussulman festivals and the first 10 days in Oct for the Hindu Dusserah were also periods in which little or no drill took place and in the latter feast, the effect on the admissions is very conspicuous, the great prevalence of the fever being to be dated from immediately after its termination

No. III.

Additional abstract of cases of Fever treated with the Sulphate of Quina.

NAMES.	Type of Fever.	No. of paroxysms before the Quinine.	Number of grains given.	No. of parox. afterwards.	REMARKS.
Yenciah	Quot. Remit.	19	4	none	Mouth previously ulcerated for 3 days.
Syed Meeran	Tert. Remit.	11	7	3	
Comahdeen	Tert. Intermit.	12	4	none	
Mahod. Ulullah	Quot. Intermit.	13	7	none	Mouth got sore at the same time.
Yencoo	Quot. Intermit.	15	7	none	
Syed Luteeff	Quot. Intermit.	16	6	none	[pearance.
Syed Fukrudeen	Quot. Remit.	13	10	1	Accompanied with some edema and general unhealthy ap-
Mootheeal	Quot. Remit.	13	7	1	
Anthony	Quot. Remit.	7	4	1	
Verdooiah	Quot. Intermit.	9	7	2	[given.
Sheik Homed	Quot. Remit.	3	5	none	Accompanied with delirium and bark and wine afterwards
Sheik Majien	Quot. Remit.	7	3	none	
Nanidoo	Quot. Remit.	9	3	2	5 ℥ss doses of bark, given after 2nd fit.

W. GEDDES,
ASSIST. SURG.

J. HAY,
SUPG. SURG.—*Ced. Districts.*

Document referred to in Page 138, *Line* 11.

Abstract of the effects resulting from the use of Sulphate of Quinine in remittent and intermittent Fevers.

NAME.	*Type of Fever.*	*Combined with any other disease & what.*	*General hours of Accession.*	*What Medicines chiefly employed previous to the quinine.*	*How many paro. recorded before the Quinine.*	*How many paro. after the quinine.*	*No. of grain of Quinine given.*	*Any other Medicine Combined.*	*Any peculiar Effects.*	*To what period no relapse observed.*	*Remarks.*
Shaik Baben,......	Quot. Remit..	None	Noon	Antmls. & P. cinch.	7	1	24	None ...	None	5 days	
Rungiah,.........	Tert. Intermit	None	Two p. m.	Ditto do. and tr. op.	24	1	30	None	Slight looseness	9 months	
Ebramkhan, ...	Quot. Remit..	None	Noon & 2	Ditto do. do.....	11	0	15	None	None	6 days	
Shaik Homed.	Tert. Remit..	None	Noon [p. m.	Ditto do. do.....	5	0	12	None	None	4½ mon.	
Venkataram.......	Quot. Remit..	None	Afternoon	Ditto do. do	8	1	9	None	None	17 days	
Barthy Gaud, ...	Tert. Remit..	Folg.chron.	Forenoon	Pulv. Cinchon.	3	0	18	None	None	4 days	
Shiek Emambutchs,	Quot.Intermit.	None [dys.	Afternoon	Ditto and tr. op....	8	1	9	None	None	20 days	
Vencatram,........	Tert. Remit..	None	Forenoon	Antls. and tr. op. ..	4	0	24	None	Slight looseness	22 days	
Mootoosamy,......	Quot. Remit..	None	Afternoon	Antls. & P. Cinchon	10	1	18	None	None	14 days	
Sufder Ally,......	Quot.Intermit.	None	Afternoon	P. Cinch. & tr. op...	7	2	15	None	None	20 days	
Vencataram,......	Quot. Remit..	None	Afternoon	Ditto do. & Antmls	16	1	15	None	Slight constipa-	10 days	
Maureapen, ...	Quot. Intermit	Dysentery	Afternoon	P. cinch Cal. & op.	22	2	18	Op.& p. Ip.	None [tion	10 days	Mouth sore
Mooneapah, ...	Quot. Intermit	None	Afternoon	Ditto do. Antmls.	16	0	15	None	None	6 days	
Armogum, ...	Quot. Remit..	None	Afternoon	P Cinch Cal. & op.	12	1	18	None	None	14 days	
Veerasamy, ...	Quot. Remit..	None	Afternoon	Ditto do. do.....	13	1	27	None	None	5 days	Mouth sore
Rungasamy, ...	Tert. Intermit	None	Afternoon	Ditto do. do.....	11	3	33	None	None	4 days	
Vencatasamy, ...	Quot. Intermit	None	Afternoon	Ditto do. do.....	20	1	21	None	None	5 days	Mouth sore
Bawaniedeen,.	Quot.Intermit.	None	Afternoon	P. Cinch. & tr. op..	5	1	18	None	None	13 days	
Sheik Omor, ...	Quot.Intermit.	None	Afternoon	Ditto do.......	8	1	18	None	None	3 days	
Abdul Nabee,.	Tert. Remit..	None	Morning ..	Ditto do. & Antls..	8	0	18	None	None	6 days	
C. J. Brown, Esq...	Tert. Remit..	None	Morning ..	Atls.p.cinch & tr. op.	4	0	16	Tr. Opii...	None	18 days	

OBSERVATIONS.

The accompanying cases were treated by me in the cantonment Hospital of this station, with the exception of the last ; the subjects of them, with the same exception, were Sepoys, and they are taken from the records of my Hospital journal. It is impossible at present to submit the originals to the Superintending Surgeon for the purpose of authenticating the facts, but I pledge myself for their correctness and if doubted they can afterwards be compared with the records in my possession. They comprise all the cases in which I have employed the Sulphate of Quinine, with the exception of four ; two of which, circumstances prevented my recording at the time, but which are equally satisfactory with the accompanying ; the third is a case of low fever with typhoid symptoms in the person of a prisoner in the Jail, who is at present under treatment ; and the 4th was in the last stage of a neglected case of Remittent fever, were the Me-

dicine appeared to stop the recurrence of the paroxysms, but the patient died from the previous debility. The benefit derived from the sulphate of quinine in the cases here given appears to be so decided that any remark would be superfluous, and I think it only necessary to mention that in three of them, the mouth got sore from calomel which had been previously given, immediately on the disease ceasing to recur, while in most of the cases, pills of the pulv. antimonialis of the same *appearance* as those of the sulph. quinine were given at the same hours as that medicine had been exhibited for two or three days after the fever had disappeared; in two of them, the 5th and 7th, these pills were commenced after 9 grains only of the quinine had been given, but only one paroxysm took place afterwards; in the 10th case also, after 15 grains of the medicine was given, the pulv. cinchon. was had recourse to, and the stopping of the paroxysms more immediately took place after the exhibition of this; it had however been previously given without any such beneficial result. I have only to add that the medicine was chiefly administered as the pulv. cinchon. is usually given, commencing from the establishment of the perspiratory stage of the previous paroxysm and in pills of 3 grains each

at intervals of 3 or 4 hours; I have however given it in a few instances in half this dose and with the same beneficial result.

W. GEDDES,

Assistant Surgeon,

CUDDAPAH, *Zillah of Cuddapah.*

12*th Nov.* 1826.

POSTSCRIPT.

The Medical Board take this occasion to publish the following documents, extracted from their records, relative to Sulphate of Quina, as supplementary to the information respecting his experience of the effects of that remedy, given by Mr. Geddes in his additional Appendix.

By Order,

W. SCOT.
SEC. MED. BOARD.

FORT ST. GEORGE,
Medical Board Office,
9th August, 1827.

No. I.

Extract from the Proceedings of the Medical Board, under date the 2nd October, 1826.

In the 6th edition of Dr. Paris' pharmacologia, after stating that a salifiable base called Quinine or Quina had been discovered in the Cinchona Cordifolia, or yellow bark, quite distinct from that which was found in the Cinchona Lancifolia or pale bark, and which was called Cinchonia, the Author makes, in substance, the following remarks.

Sulphate of Quina forms chrystals quite remarkable for their satin-like and pearly lustre.—It is soluble in cold water, a property which is very considerably increased by an excess of acid. This appears to be the most efficient of all the salts of bark, and is one from which much advantage has been frequently derived. In its exhibition, we must be careful not to combine it with substances that form insoluble compounds with it. The form in which the Author has personally prescribed it, is that of solution with a small quantity of sulphuric acid, in the proportion of a minim to every grain of the salt—a wine of quina may be made by adding five grains of the sulphate to a pint of sherry; a tincture, by dissolving the same quantity in eight fluid ounces of rectified spirit.

The following copy of a report on the use of the sulphate of quina, by assistant Surgeon H. S. Fleming M. D. dated 6th February, 1826, is given by the Board, as illustrative of the great utility of the sulphate of quina, in chronic cases of intermittent fever, and at the same time as affording an example of a concise method of report which has met the particular approval of the Board. The only omission seems to be, that the dose is not specified, the Board understand it to have been two grains.

No. II.

Copy of a letter from Assistant Surgeon H. S. Fleming M. D. to the Superintending Surgeon, Presidency Division.

SIR,

With reference to your Circular Letter of the 1st instant, concerning the sulphate of quinine, I have the honor to state the result of my limited experience of its use in intermittent fever. I have prescribed it in sixteen cases of intermittent fever: and in all these cases the paroxysms ceased to return after it had been used from one to four days. It is proper to observe, that nearly all the cases were chronic; and that the subjects of them had been long previously subjected to medical treatment. In

four cases the paroxysms had been slight, and had occurred at irregular intervals; and in two other cases the mouth became sore from the use of calomel immediately before the disease yielded: but the remaining ten cases, though chronic, afforded pretty good instances for ascertaining the febrifuge powers of the sulphate of quinine. Of these ten, four were regular tertians, and six were marked as quotidians, though, on more minute examination, some of them might probably be referred to the double tertian. The first return of the paroxysm was prevented in two cases; the second in six; and the third in the remaining two. The medicine was given in the form of pill generally to the amount of 16 to 20 grains during the intermission. The average quantity given, before the disease was arrested, was about 30 grains: but the medicine was continued for some time afterwards, commonly in the quantity of eight grains a day, to prevent a relapse. No inconvenience was experienced from its use.

Having given the result of my practice, it would be superfluous to add an opinion on the subject.

I have the honor &c.

H. S. FLEMING, M. D.

ASSISTANT SURGEON.

FORT ST. GEORGE,
6th Feb. 1826.

No. III.

A severe case of remittent fever, in which very decided benefit is stated to have been experienced from the free use of sulphate of quina at the time of remission, in producing a complete intermission of febrile symptoms.

FEBRIS BILIOSA REMITTENS.

HENERY MARSHALL, ENSIGN, ÆTAT. 17
6 Months resident in India.

4th JANUARY 1827. This officer was admitted on the sick report at 3 o'clock p. m. complaining of fever. He states, that before the fever came on, he had rigors of an hour's duration. Pulse 84, skin hot and dry; tongue white, bowels regular.

Mr. Marshall is naturally of a bad and weakly constitution and has been in the habit of exposing himself greatly to the sun. He has also made a frequent practice of bathing in a tank at 12 o'clock noon.

℞. Magnes: Sulph: ℥ss. Antim Tart: gr. iv.
Aquæ Puræ ℥xxiv m. ft. Haustus, cujus Sumat Cyathum Vinosum plenum Secundâ quâque horâ.

℞. Hydrarg. Submur. gr. xij. P. Jacobi gr. iv. Opii. gr. j. m. ft. Bolus, horâ.
Somni Sumendus.

℞. Inf. Sennæ ℥ij. Magnes. Sulph. ʒiv. Extr. Colocynth gr. vi. aquæ Menthæ ℥j. m. ft.
Haustus cras mane Capiendus.

January 5th.—He slept well and perspired profusely during the night. The medicines operated freely bringing away several copious dark coloured stools. Pulse 80 soft and compressible, tongue white in the centre.

Vespere.—At 2 o'clock p. m. he was attacked with rigors and in the course of an hour he became restless and feverish, pulse 108, hard, skin hot and dry, tongue much excited, thirst urgent, and he complains of great pain in his head which is hotter than any other part.

Venæ Sectio ad ℥xxiv. Rept. Bolus Hydrarg Subm. c̄ Pulvere Jacobi et opio hora Somni et Haustus Purgans cras mane. Contr. Mistura ex Magnes. Sulph. et antim Tart.

January 6th.—He was much relieved by the bleeding, and slept well during the night. He had two copious dark coloured stools from the medicines, pulse 96, sharp, tongue dry, white and excited, skin hot with slight moisture on the forehead and upper lip, urine high coloured and scanty, moans deeply at times.

Vespere.—Great exacerbation of symptoms, pulse 120, hard and full, tongue much excited, thirst urgent, skin hot, dry and of a deep yellow tinge, urine high coloured and scanty, moans deeply and complains of violent pain in his head, he has had several dark coloured stools during the day.

Venæ Sectio ad. ℥xxiv Contr. Mistura ex Magnes. Sulph. et antim. Tart. Reptr. Bolus Hyrdarg. Subm. c̄ pulvere Jacobi et opio et Haustus purgans ut Antea.

JANUARY 7th.—He was much relieved by the bleeding and slept well during the night, he has had several dark coloured stools, pulse 96, skin hot and of a deep yellow tinge, tongue much excited, thirst less urgent.

Vespere.—Great exacerbation of symptoms, pulse 120, sharp and irregular, skin hot, tongue dry and much furred, urine scanty and high coloured, head very hot and painful. His ideas seem indistinct, and there is some degree of torpor about him, he moans frequently.

Hirudines xxiv statim Temporibus.

Repr. Bolus et Haustus purgans ut antea.

Contr. mistura ex magnes: sulph: et antim: tart.

JANUARY, 8th.—The leeches afforded great relief, he had several dark watery and fœtid stools from the medicines, pulse 120, tongue dry and covered with a dark fur, skin very hot and of a deep yellow tinge. He moans frequently, there was a slight remission of fever at 12 o'clock noon, when the pulse fell to 100, and there was slight moisture on the forehead and upper lip, this was succeeded by an exacerbation of symptoms, he became restless and irritable, thirst very urgent, burning heat of skin, occasional aber-

rations of mind, urine high coloured, scanty, and passed with such difficulty as to require fomentations to make it flow.

Contr. Mistura ex Magnes: Sulph. et Antim. Tart.
Rept. Bolus horâ Somni : et cras mane.

JANUARY 9th.—He continues much in the same state, pulse during the fever 125, and at the remission 100, tongue quite dry, and covered with a dark fur—at the point and edges it is of a deep red colour—thirst urgent, stools frequent watery, dark, and fœtid, urine scanty, high coloured and passed with difficulty, skin very hot, he moans frequently.

Contr. Mistura ex Magnes: Sulph et Antim. Tart.
Repr. Bolus bis in die—Frictiones ex unguent Hydrarg: ℨj in die

JANUARY 10th.—He continues in the same state, a remission of fever takes place at 12 o'clock noon, but it is very slight and is followed by an exacerbation of symptoms.

Contr. Mistura ex Magnes: Sulph. et Antim. Tart.
Repr. Bolus bis in die et Frictiones ex unguent Hydrarg.

JANUARY 11th.—No alteration for the better, pulse 130, skin hot and of a deep yellow colour, tongue quite dry and covered with a dark chocolate coloured fur, and when touched it feels as rough as a nutmeg grater, urine scanty and passed with difficulty, stools frequent watery dark and very fœtid.

℞. Quinæ Sulph. gr. xij. Micæ panis aquæ āā qs. ut. ft. pilul. xij. quarum, Sumat unam ad remissionem febris, et repetatur quâque horâ febre absente.

The pills had the desired effect of bringing on an intermission of fever. The pulse fell to 98 and all the symptoms were relieved. The skin became cool and there was slight moisture on some parts of the body. At 12 o'clock midnight, at which time I saw him last, the fever had not returned.

Omitr. Bolus et Frictiones ex unguento Hydrargyri. Repr. Mistura ex Magnes Sulph. et antim. Tart. ad accessionem Febris.

JANUARY 12th.—At 1 o'clock a. m. the fever returned with great exacerbation of the symptoms already detailed. He became delirious requiring force to keep him in his bed and calling out in the most outrageous manner. Towards day-break, he fell into a state of torpid insensiblity, pulse 135. A remission of fever took place at 8 o'clock a. m. when the pulse fell to 108 and the heat of skin was reduced with slight moisture on the forehead.

Sumat Pilulas Quinæ Sulphatis tres ad remissionem febris, et postea duas quâque horâ febre absente
Rept. mistura Magnes. Sulph. et antim. Tart. ad accessionem febris.

The pills again brought on a complete intermission of fever. The pulse fell to 96, the skin

became cool and suffused with a gentle perspiration. He complains that his gums are swelled and very tender—his bowels were twice opened, stools contain healthy bile and are less fœtid. But he complains of violent pains in his legs loins and back; he has occasional spasms in his limbs. He is excessively reduced and so much exhausted as to be unable to move in his bed without assistance.

JANUARY 13th.—He slept well during the night and has had no return of fever. He still complains of the pains and spasms in his legs, and an uneasy sensation in his back and loins. His mouth is very sore and ptyalism has commenced. Bowels open, pulse 96, soft and regular, urine passed easily, more copious but still high coloured, small pieces of dark fur have separated from the tongue leaving it smooth and moist, skin cool and moist.

Contr. Pilulæ Quinæ Sulphatis.

JANUARY, 14th.—He is much better and has had no return of fever. Ptyalism is very severe and he has much difficulty in opening his mouth owing to pain and swelling of the glands under the jaw. Pains of the back, loins, and legs occur occasionally, but are not constant, pulse 96, soft and regular, tongue white but moist, skin natural, bowels open, urine copious and more natural.

Contr. Pilulæ Quinæ Sulphatis.

From this date Mr. Marshall, gradually improved in health. But his recovery was retarded by severe ptyalism and obstinate costiveness. He had however considerably regained his strength and his health seemed almost re-established when, on the 12th February, he was attacked with tertian intermittent fever in consequence of exposing himself to the sun.

This was easily removed by the quinæ sulphas and he is now in a state of perfect convalescence though much reduced and greatly debilitated.

The quantity of quinæ sulphas exhibited on the 11th January, was thirteen grains, on the 12th January, thirty-one grains, on the 13th January, twenty-four grains and on the 14th January, twenty-four grains. During the convalescence of Mr. Marshall, the quinæ sulphas, in small doses, acted powerfully as a tonic.

Twenty-four grains of quinæ sulphas entirely removed the attack of tertian intermittent fever.

GHOOTY, J. BELL,
8th March, 1827. ASST. SURG.
42nd Reg. N. I.

J. HAY,
SUPG. SURGEON,
Ced. Dist.

No. IV.

It appears that the sulphate of quinine was exhibited in the above case at the times of remission on the 11th January, when the symptoms

indicated a very high degree of danger, and was still more freely administered on the following day, from which time the patient continued without fever till the 12th February, and ptyalism came on, which the severity of the febrile exacerbations would probably have prevented but for their recurrence being checked by the operation of the sulphate of quinine. It is obvious however that no important inference can be legitimately drawn from a single case, as the patient's recovery might have been independent of the agency of remedies altogether, or might have been the effect of the calomel &c. previously used, in either of which cases salivation was to be expected on the occurrence of a favourable change, whatever might have been the agency through which that favourable change took place. With reference to the shortness of the period favourable to the administration of the sulphate of quina that is generally met with in cases of remittent fever, the Board consider that, if this remedy should be found an efficient agent in the cure of that disorder, it will be requisite that a considerable quantity should be exhibited in a short time, and probably the object of securing its speedy action, so as to yield its effect within the period of decided remission, would be best attained by prescribing it in solution.

FORT ST. GEORGE, [*Note by the Medical Board.*
Medical Board Office,
19*th March*, 1827.

No. V.

A case of Intermittent fever, in which the sulphate of Quina was used by Surgeon Stevenson 2nd. Regt. Light Cavalry.

CASE OF CORNET STRANGE,

2nd. Regt. Light Cavalry.

1826, November 1st.—Cornet S. Ætat. 20 of

a sanguine temperament, resident in India 6 months.—Was affected yesterday at 12 o'clock with a cold fit followed by intense heat of skin, considerable head-ache and pains in his limbs, tongue furred, and pulse full and frequent. Took a solution of tartrite of antimony last night which vomited him twice, feels rather better this morning, but has still some head-ache and skin is rather warm, bowels not opened. Has had two or three bilious attacks since his arrival at Secunderabad, in other respects very healthy.

Habeat statim Hyd. Submur. gr. iv. Ext. Jalap. gr. x m. f. pil. iij.

1st. NOVEMBER, *Vespere.*—Considerably better, pulse and heat nearly natural, but tongue is much loaded, the pills have not operated.

H. S. sumat Cal. gr. iii. Ext. Colocynth. gr. vii. f. pil. ij. Infus. Sennæ ℥x. Magnes. Sulph. ʒvj. m ; ℥iij omni horæ dimid. cras mane donec alv. respondeat.

2nd.—Has had no return of fever and has been purged copiously all night, tongue still foul. Nihil.

3rd.—Had a slight hot fit yesterday afternoon, which went off in the evening, and he had a sound night's rest and is free from fever this morning.

2 p. m.—Continues free from fever,—

Quinæ sulph. gr. iss. ter in die.

Nov. 4th.—Had a severe paroxysm of fever at 12 m. with much shivering, very acute headache, took 15 drops tinct. opii, at the commencement of the fit, no evacuation, omitted to take his Quina both last night and this morning.

> Hyd. Submur. gr. iij. pulv. Antim. gr. iij. statim Mixt. Salin., Calomel gr. iij. Ext. Col. gr. x. f. Pil. iij h.s.s.

5th.—Fever left him at 7 last night, pulse and heat nearly natural, has still some headache, 2 scanty stools from the pills.

> Habeat Quinæ Sulph. gr. iij. hora 2d. pomerid. et repetr. hora somni.

6th.—Had a slight attack of fever during the night with scarcely any cold fit, skin still hot and pulse frequent and strong, bowels open. omittr. quinæ sulph.

—2 p. m. Fever still continues, appears delirious, face much flushed, skin very hot and dry, pulse frequent and strong.

> Appr. Hirudines xviii. temporibus et aqua frigida capiti. Pulv. Ant. et Cal. āā. gr. iij. statim, rept. 3tiis horis; h. s. Cal. gr. iij. Ext. Jalap. Ext. Colocynth. āā. gr. vi. m. ft. pil. iij: Infus Sennæ c. Magnes. Sulph. ℥iij omni horâ cras mane donec alvus bene soluta fuerit.

7th.—Became rational after the application of the leeches and cold water, and fever left him at 8 p. m.—Has had some sleep, head-ache nearly gone, pulse and heat nearly natural,—two or three stools rather dark, and passed a lumbricus, tongue furred, much thirst.

Haustus Salin. Effervescent. pro re nata. Hora 2da. pomerid. habeat Quinæ Sulph. gr. ij. Aquæ ℥ij Acid. Sulph. Dil. m. 5. fiat Solutio.

Vespere.—Quite free from fever and head-ache, —two or three stools since morning.

Rep. solut. sulph. quin. h. s. et cras mane non urgente febre.

8th.—Passed a tolerable night, skin cool and pulse natural. Cont. solutio.

9th.—Had slight heat of skin at 2 yesterday, but no paroxysm, had a good night. Cont. med.

10th.—Free from fever.—Went to Bolarum for change of air,—returned to Bowenpilly on the 19th and had a relapse at 2 the same day, since which period up to this date he has had daily paroxysms of fever with very short intermissions and exhibiting the double tertian type, which has reduced him greatly, under these circum-

stances I have recommended a change to these a coast.

JAMES STEVENSON.

BOWENPILLY, SURGEON.
29th. Nov. 1826. *2nd Reg. Light Cavalry.*

T. EVANS.

SUPT. SURGEON.
Hyd. Sub. Force.

REMARK BY THE MEDICAL BOARD.

The quantity of sulphate of quinine ordered in this case is probably quite inadequate to arrest the progress of an intermittent, altho' the same remedy exhibited in doses of two or three grains at short intervals so that 15 grains or a scruple may be given during the intermission would appear to be almost specific in obviating the recurrence of paroxysms in this disorder.

FORT ST. GEORGE.
Medical Board Office.
11th. Dec. 1826.

No. VI.

Report on the use of the Sulphate of Quina, Surgeon James Stevenson, to the Superintending Surgeon Hyderabad Subsidiary Force.

SIR,

Agreeably to the late circular from the Medical Board, I have the honor to report on the use of sulphate of quinine in intermittent fever, of which I subjoin a table of cases treated al-

most entirely by that medicine, which affords the satisfactory conclusion that the average number of cases were cured after the 2d. paroxysm following the exhibition of the medicine, the cases were treated on admission by an antimonial emetic, followed by calomel and colocynth and infusion of senna until the bowels were well opened and the tongue became clear, as I have observed that when given at too early a period, especially when any frequency of pulse exists, it frequently fails, and in some cases produces violent excitement of the brain, and in two instances delirium; it appears to me therefore that unless the intermission is complete and the primæ viæ cleared, the exhibition of the sulphate of quinine is injurious. I beg leave to remark that I have found a much smaller dose answer the purpose of stopping the paroxysms than suggested by the Board, which fixes the average quantity per diem at 20 grains. 9 grains is the largest and 6 the smallest quantity I have been in the habit of using during the day, which, if given at the proper period before adverted to, seldom requires to be continued more than 3 days. The average quantity required would seem to be 15 grains—I have lately preferred a solution of the sulphate as the best mode of exhibition, 3 grains being dissolved in 3 ounces of

water by adding 5 minims of diluted sulphuric acid, without which it is insoluble; in cases of severe intermittents where the paroxysms are long and intervals short, it is probable that to prevent an accession, the solution will, by being more diffusable, act more speedily than in the form of pill. Having given the result of the sulphate of quinine in 22 cases, I beg to add, in conclusion, that it corresponds with some trials I made of the medicine about a year ago.

I have the honor to be,

SIR,

Your most obedient Servt.

JAMES STEVENSON,

SURGEON,

2d Reg. Lt. Cavalry.

BOWENPILLY,
OR SECUNDERABAD,
4th Dec. 1827.

T. EVANS,

SUPT. SURGEON.

REMARK BY THE MEDICAL BOARD.

If the case of cornet Strange be compared with this Report it will irresistably, the Board conceive, give rise to a belief that the occurrence of delirium was merely a result of the progress of fever, which the small quantity of quin[illegible]xhibited was inadequate to arrest.

FORT ST. GEORGE.
Medical Board Office.
14th. Dec. 1826.

Return of cases of intermittent Fever treated by the Sulphate of Quinine.

NAMES.	*Rank.*	*Type of Fever.*	*Date of Attack.*	*No. of paroxysms before the exhibition of Quinine.*	*No. of paroxysms after the exhibition of Quinine.*	*No. of grains used.*	REMARKS.
I. Stevenson	Surgeon ..	Tertiana Duplex .	[1825 24th Augt..	8	None	18	Previously treated by Calomel.
Do.	Do. ..	Do.	21st Dec...	3	None	9	Exclusively by quinine, after purgatives, great excitement of the brain follg. the medicine.
Do.	Do. ..	Do.	[1826. 16th Jany..	1	1	12	Exclusively, cerebral excitement.
Shaik Hommed	Trooper ...	Quotidiana......	28th Sept. .	14	8	16	
Syed Beram.......	Naigue....	Tertiana Duplex .	30th ,,	9	4	12	
Mahommed Shereef	Trooper ..	Do.	4th Octr...	7	None	12	
Allee Khan.......	Havildar ..	Quotidiana......	9th ,,	1	4	10	
Goolam Hussein. ..	Trooper ...	Do.	11th ,,	1	3	2	
James Blake	Farrier....	Tertiana Duplex .	21st ,,	1	None	22	
John McAllum	Do.	Do.	21st ,,	1	2	22	
Timothy Hewitt....	Do.	Quotidiana......	21st ,,	2	1	16	
William Dhoyle....	Do.	Tertiana Simplex.	21st ,,	3	2	24	
William Pharoah ..	Trumpeter.	Quotidiana......	26th ,,	1	1	12	
Syed Hyder	Trooper ..	Tertiana Duplex .	17th ,,	7	13	8	
Richard Langford..	Trumpeter.	Quotidiana......	31st ,,	2	None	12	
William Strange....	Cornet....	Tertiana Duplex .	1st Novr ..	2	3	16	Quinine produced delirium, & also the same [symptom after a relapse.
C. Phillimore......	Lieutenant	Quotidiana......	5th Octr...	2	2	18	
Do.	Do.	Tertiana Simplex.	4th Novr..	1	1	21	
G. Cumming	Asst. Surg.	Quotidiana......	[illegible]th Octr...	3	2	24	
William Pharoah ..	Trumpeter.	Tertiana Duplex .	[illegible] Novr..	5	4	22½	
Thomas Dridge	Farrier....	Do.	20th ,,	9	3	16	
John McLawrance .	Do ..	Quotidiana......	27th ,,	3	None	2	

FINIS.